

AN INVESTIGATION INTO USING TEXT MESSAGE INTERVENTION TO
PROMOTE INFORMATION RETENTION OF FUNCTIONAL BEHAVIOR
ASSESSMENT AMONG CAREGIVERS OF CHILDREN WITH AUTISM
SPECTRUM DISORDERS IN LOW SOCIOECONOMICS AREAS

by
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CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Abstract

This study examined the effects of an in-person training and text message reminder program on knowledge of functional behavior assessment for caregivers of students with Autism Spectrum Disorder in low socioeconomic areas. A quasi-experimental non-equivalent pretest posttest design was used with 14 caregivers who have students in the District of Columbia Public Schools Autism Program. The intervention consisted of a training and a text message reminder program to examine the effects of text messages on knowledge retention following the training session. Results document that when text messages were provided, parents were able to retain acquired knowledge at a higher rate than their comparison counterparts. Contributions to the literature, implications, and future directions are discussed.

Keywords: Autism Spectrum Disorder, caregiver, functional behavior assessment, text message

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This work is dedicated to my husband, Timothy. I give my deepest expression of love and appreciation for the encouragement that you gave and the sacrifices you made during this program. I am forever grateful for the support, insight, and company during late nights and long days of typing. It is also dedicated to my mother, Nancy, whose own doctoral work and dedication to raising my brother and I, inspired me to dream bigger than I ever thought I could. Finally, it is dedicated to my students, past, present, and future, all of whom have shaped me and continue to inspire me to embrace learning and laughing through hard work and discipline.

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Chapter 1: Summary

About one in 88 children have been identified with Autism Spectrum Disorder (ASD) according to estimates from the Centers for Disease Control's Autism and Developmental Disabilities Monitoring Network (Centers for Disease Control, 2012). As a result, many families are in need of assistance in working with the challenging behaviors that can accompany a diagnosis of ASD. Challenging behavior can affect the ability of a child to access education, leisure activities, and interactions with age appropriate peers, caregivers, and family members. There are numerous options for 'treatment' and interventions for use with children who display challenging behavior. Applied Behavior Analysis (ABA) is one of the treatments that have been identified to benefit children with challenging behavior (United States, 1999, p. 164). While ABA is effective across disabilities, much of the application of ABA has been completed with children with ASD (Dillenburger & Keenan, 2009).

A goal set by Washington, DC Mayor Vincent Gray in 2011 stated that by 2014, DC Public Schools (DCPS) would reduce the number of DCPS students receiving special education services who receive non-public education outside of DCPS by 50% (Brown, 2012) by increasing the capacity of DCPS to serve these students. The DCPS Autism Support Program currently offers only four sessions of parent training per school year ("Support and Resources for Parents", 2014). An objective of this research project is to further investigate the success of a caregiver behavioral skills training aimed at identifying the cause and maintenance of challenging behavior of students paired with the addition of innovative remote strategies to further support caregivers.

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As urban school districts strive to promote rapid school turnaround, meaningful and resourceful strategies and interventions are needed to support caregiver engagement and education, a crucial piece of the work necessary to decreasing challenging behavior in students with ASD.

Background and Conceptual Framework

The purpose of this section is to provide context for the focus of the study, to demonstrate why the topic is relevant and timely, and to build a case for the problem and purpose statements (Lunenburg & Irby, 2008, p. 113). The context and argument for this study begins with a brief review of a functional behavior assessment (FBA), parent engagement in their child's education amongst low socioeconomic status (SES) areas, and technology. The use of text message technology has emerged within the health and human services field (U.S. Department of Health and Human Services, 2014); however, application in the educational realm has been minimal.

Traditionally, behavioral interventions have used standardized methods in order to reduce problem behaviors with no consideration given to the variables that may be functionally related to the individual's problem behavior (Newcomer & Lewis, 2004). For example, when a classroom-wide consequence to challenging behavior is a timeout, children whose challenging behavior is a function of escape from a demand will only be reinforced by this consequence, making it more likely to occur in the future. When using a FBA, the data collected attempts to establish a cause and effect relation between the target behavior and environment, whereas in more traditional psychological assessments, the data are a score (or scores) from a standardized test, which hypothesizes a construct

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within the child (Shriver, Anderson, & Proctor, 2001). “The central goal of the FBA is to identify environmental conditions that are associated with the occurrence or nonoccurrence of problem behaviors” (Gresham, Watson, & Skinner, 2001, p. 158). Typically, a completed FBA includes consequences, identified antecedents, a hypothesis statement regarding the perceived function of the targeted behavior or behaviors, and an operational definition of the behavior (Scott & Eber, 2003).

In a study assessing the use of indirect descriptive methods of assessment in a FBA, rather than in an experimental functional analysis, Newcomer and Lewis (2004) found agreement between indirect and direct methods to identify primary functions, maintaining consequences, and environmental factors contributing to challenging behavior. The descriptive form of a functional assessment carries validity versus when the same target behavior is analyzed using a functional analysis. The results of this study are relevant because “valid and accurate results were produced with less time-consuming methods than the experimental manipulations that are used in order to complete a functional analysis” (Newcomer & Lewis, 2004, p. 177). These outcomes are meaningful in that they expand the applicability of functional assessment across a wider range of target behaviors and contexts (Newcomer & Lewis, 2004).

Furthermore, the study carried out by Newcomer and Lewis (2004) provides additional evidence that indirect descriptive assessment strategies, or FBAs, are accurate in the design of interventions for children with behavior problems and for whom traditional approaches to behavior management may not have been as effective. However, for the use of FBAs to become more mainstream, it is imperative that their effectiveness remains even when experts are not part of the process (Scott et al., 2005).

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Training caregivers in the basic ability to assess behavior based on the function rather than the topography is an essential step to empowering caregivers to work with their child's challenging behavior, and making lasting and socially significant impacts on the child's life. Finding meaningful, accessible, and cost-effective ways for caregivers to engage with practitioners and schools is a key step to successful caregiver and familial involvement.

It is essential to empower parents and caregivers by thinking of parents as educational partners. Educational leaders have become more conscious of the evidence that traditional parental involvement norms and programs, such as volunteering in classrooms, holding bake sales, and midday parent association meetings are not very effective when it comes to engaging working families of diverse backgrounds (Auerbach, 2010). Discrepancies between race and SES can be correlated with variable degrees of familial involvement in a child's academic career. Henderson, Mapp, Johnson, and Davies (2007) found that parents who identified as Caucasian of higher SES have a higher likelihood of being more inclined to be involved with their child's school. This constituency of parents participates in activities such as attending school events, volunteering, taking part in governance, and following through on educators' requests. Conversely, Henderson et al. (2007) determined that parents of low SES or parents of color have a higher likelihood of having infrequent communication with educators, supporting their child's education indirectly behind the scenes, and receiving a generalized education without pushing for their child's specific academic and behavioral needs. Furthermore, they are less likely to challenge their schools to advocate for their children. This faction of parents is limited partially by "linguistic and logistical barriers,

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cultural discontinuities, a sense of intimidation, and legacies of distrust” (Auerbach, 2010, p. 730).

The Pew Research Center reports that as of 2013, 91% of all adults in the United States own a cell phone, with at least 43% of those in a low SES bracket having a smartphone (a smartphone is defined as a mobile phone with an advanced mobile operating system; Smith, 2013). Today, Americans living in or near the poverty line are more likely to live in cell phone-only households, or a household with no fixed landline (Hu, Balluz, Battaglia, & Frankel, 2011). Additionally, individuals who live in the above-defined cell phone-only households are more likely to have experienced numerous barriers to health care supports (Hu et al., 2011). This prevalence of cell phones, in comparison to landlines, supports the idea that access to this form of technology by families living in low SES areas is widespread. “It is possible that effectiveness of technology interventions would be greater with low-income families compared with programs delivered through in-person contacts because of the many barriers families face to recruitment and retention in onsite programs” (Swindle, Ward, Whiteside-Mansell, Bokony & Pettit, 2014, p. 489).

The use of a mobile technology interventions shows potential to be a better fit to “the frequent physical moves and inconsistent schedules of many low-income families” (Swindle et al., 2014, p. 489). In the current digital age, technology may possess the components needed to address the demand for accessible, inexpensive, and scalable interventions (Swindle et al., 2014). “Mobile technology’s low start-up cost, text messaging capabilities, and flexible payment plans make it attractive for use in supporting a range of interventions” (U.S. Department of Health and Human Services,

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Health Resources and Services Administration, 2014, p. 4). The combination of low resource requirements paired with widespread mobile device availability across demographics increases the applicability of text message interventions to further generalize knowledge retention among caregivers in low SES areas when providing training on the functional assessment of challenging behavior.

Statement of the Problem

Parents of children diagnosed with disabilities can struggle to effectively support their children's challenging behavior. Without access to parent training addressing the functional assessment of problem behavior, these parents lack the framework and tools necessary to successfully implement behavioral interventions based on function rather than topography with their children in the home environment. In addition, the SES of parents can play a significant role in the implementation of behavioral interventions that children receive; therefore, this problem of practice will focus on parents of children with ASD who attend DCPS, where a large percentage of families fall within a low SES band.

Purpose Statement

The purpose statement is a declaration of how the study attempts to solve the problem posed in the previous section (Lunenburg & Irby, 2008, p. 116). The purpose of this study is to analyze data collected from a caregiver training on functional assessment of challenging behavior to determine the extent to which the training enabled an increase in test scores on content based on the training. Further data collection surrounded the use of text message supports in retention of newly acquired information following the in-situ training.

Significance of the Study

The data collected and analyzed in this study contribute to the larger body of knowledge on caregiver engagement and text message supports in low socioeconomic areas. Additionally, some educational institutions may find value in the instruments used to measure caregiver increase in test scores regarding content presented during a training and retention following trainings. Most importantly, the data collected and analyzed in this study potentially impacts family engagement strategies at both the school and district levels for diverse urban school districts.

Delimitations

Delimitations are self-imposed parameters set by the researcher on the objective and scope of the study (Lunenburg & Irby, 2008, p. 134). The parameters of this study with respect to time, location, and population are:

- (a) A non-equivalent groups design was used, so the four training sites used were located at comparable schools. The schools were selected to be as demographically similar as possible to fairly compare the Comparison Group to the treatment group; however, due to non-randomization, it cannot be surely determined that the groups are comparable.
- (b) This study focused only on individuals who volunteered to participate.
- (c) The one-time approximately two-hour intervention was limited to four training sites, or schools, within DCPS due to resource constraints in providing incentives for participation.
- (d) The time of one month between training and the final posttest was put in place due to programmatic parameters.

Assumptions

Assumptions are the parameters around which the study was conducted, including the "nature, analysis, and interpretation of the data" (Lunenborg & Irby, 2008, p. 135). This study was conducted with the research assumptions that (a) the participants provided accurate and honest responses to the best of their ability, and (b) the instrument used to collect data purports to measure what it is intended to measure when the proper analysis is applied.

Research Questions

Research questions guide the study and provide the structure for presenting the results of the research (Roberts, 2010, p. 136). The primary research questions investigated by the study include:

- (a) What is the rate of attendance at in-person trainings when incentives for attendance, such as dinner, childcare, a backpack full of school supplies, and a grocery store gift card are used?
- (b) Are high-level concepts, such as functional assessment of challenging behavior, able to be broken down into a training, so that caregivers are able to score higher on a questionnaire assessment?
- (c) Following one in-person training, does the use of text message push-reminders promote higher rates of information retention?
- (d) Does participation in a training intervention on functional behavior assessment affect caregiver attitudes and/or opinions?

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Overview of the Methodology

This study was carried out with a non-equivalent groups pretest and posttest design. In this experimental research, the use of in-person training for caregivers, incentives, and text message supports (independent variables) were monitored, and scores on a test regarding the training content on functional assessment of challenging behavior (dependent variable) were measured.

Organization of the Study

Chapter one of this study presents an introduction to the problem and defined the scope and context of the study. Chapter two delves into a review of the existing literature behind the problem of practice looking at functional assessment of behavior, family engagement among low SES populations, and mobile technology prevalence. Chapter three is a summary of the procedures and results from a needs assessment completed to enhance the evidence for the necessity of the intervention. Chapter four contains a review of literature aimed at the methodology surrounding training caregivers on functional assessment of behavior, effective contingencies to promote attendance, and the application of text message use. Chapter five is an analysis of the methodology of the study and describes the specific tests used to measure the data against the research questions. Chapter six offers an analysis and summary of the study, limitations, as well as recommendations for future research and implications for further action.

Chapter 2: Introduction of a Problem of Practice

Challenging behavior can affect the ability of a child to access education, leisure activities, and interactions with peers, caregivers, and family members. Children with challenging behavior are also commonly diagnosed with a disability (Matson, Tureck, & Rieske, 2011). These disabilities include, but are not limited to: ASD, Attention Deficit Hyperactive Disorder, Emotional and Behavioral Disabilities, and Pervasive Developmental Delay. About 1 in 88 children have been identified with ASD according to estimates from the Centers for Disease Control's Autism and Developmental Disabilities Monitoring Network (Centers for Disease Control, 2012). There are numerous options for 'treatment' and interventions for use with children who display challenging behaviors. ABA is one of the treatments that have been identified to benefit children with challenging behavior (United States, 1999, p. 164). While ABA is effective across disabilities, much of the application of ABA has been completed with children with ASD (Dillenburger & Keenan, 2009). While Although, interventions may be effective across disabilities, for the purposes of this study, the research will focus on children diagnosed with ASD. ABA utilizes interventions based on the function of behavior rather than the topography of behavior. The interventions focus on why the behavior is occurring, or what function it serves, rather than what the behavior looks like.

There continues to be a discrepancy between services and parent involvement for children with challenging behavior. Irvin, McBee, Boyd, Hume, and Odom (2012) examined the child and family characteristics thought to affect the amount and type of services received by children diagnosed with ASD and found that higher SES families are more likely to have more services with a higher dosage than their lower SES counterparts

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(p. 571). Therefore, it may be suggested that attendance at trainings and workshops by caregivers and families may be lower in areas with a low SES demographic.

With parent involvement in education now mandated by federal statutes (Duchnowski et al., 2012), areas with a lower SES demographic may face additional challenges to comply with the law. Further, parents with children with special needs have different needs than the parents of a child who do not have an Individualized Education Plan (IEP). Parents of children with a disability have IEP meetings to attend, related service providers to coordinate, and often have to educate a new staff on their child as each school year commences. Accordingly, separate programming is necessary to address the requirements of the parents of these children with special needs (Murray, Handyside, Straka, & Arton-Titus, 2013). Establishing a caregiver training curriculum based on the functional assessment of challenging behavior, which shows evidence of increased knowledge on functional assessment, is only one aspect of the success of a program. A focus on the involvement of families as well as strategies that increase knowledge retention and attendance at trainings on challenging behavior are essential components in the framework for a successful caregiver-training program on challenging behavior.

Problem of Practice

Parents of children diagnosed with ASD often struggle to effectively support their children's challenging behavior. Without access to parent training addressing the functional assessment of problem behavior, these parents lack the framework and tools necessary to successfully implement behavioral interventions based on function rather than topography with their children in the home environment. In addition, the SES of

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parents can play a significant role in the implementation of behavioral interventions that children receive; therefore, this problem of practice will focus on parents of children with developmental disabilities who attend DCPS, where a 76% of students receive Free and Reduced Meals, an indicator of low Socioeconomic status (District of Columbia Public Schools, 2015).

Theoretical Framework

The field of ABA is still on the verge of becoming “mainstream,” with ABA now being paid for by insurance as treatment for individuals with ASD, implemented in schools, utilized for early intervention services, and recognized by the Surgeon General (1999) as an effective treatment for individuals with ASD (United States, & United States, 1999, p. 164). ABA is an educational approach that utilizes interventions based on behaviorist theory, specifically B.F. Skinner’s discernment of operant behavior. While previous behaviorism work focused on just the antecedent stimulus and the target behavior (Watson, 1913), Skinner (1974) centralized his work on the consequence delivered to the organism as a result of the behavior, and consequently what effect that had on the future occurrence of that target behavior. Behavior that was changed due to the consequence it receives is what Skinner named operant behavior. If the consequence that is delivered immediately following the target behavior strengthens the behavior, or increases the future frequency of behavior, it is reinforcing (Skinner, 1974, p. 48).

In order to increase the future frequency of behavior, Skinner (1974) stated that the focus must be on how the environment surrounding the organism, or person, delivers consequences to the behavior. Environmental conditions receive the greatest emphasis when discussing operant behavior over the conditions of the learner (Ertmer & Newby,

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1993, p. 55). By focusing on the environment, the theory of behaviorism informs practitioners that it may be possible to change behavior by changing the environment, or more specifically, examining the consequences that occur immediately following an instance of behavior can assist in hypothesizing the function of the challenging behavior.

The key point of behaviorism is that what people do can be understood. Traditionally, both the layperson and psychologist have tried to understand behavior by seeing it as an outcome of what we think, what we feel, what we want, what we calculate, and etcetera. But we don't have to think about behavior that way. We could look upon it as a process that occurs in its own right and has its own causes. And those causes are very often found in the external environment. (Cooper, Heron, & Heward, 2007, p. 15)

By focusing on the environmental events following a target behavior, instructors and caregivers can increase the future frequency of that target behavior (Ertmer & Newby, 1993, p. 57). When collecting and analyzing data on the consequential responses to target behavior, teachers, therapists, and caregivers may be able to determine the function, or why, the behavior is being reinforced and maintained. This has significance for academic, behavioral, and social instruction across generalized settings for learners with developmental disabilities. ABA is an application of behaviorism in an applied or generalized setting. While ABA has been identified to help children with ASD (United States, & United States, 1999, p. 164), it is the “science on which a wide range of techniques are based that have been used to help people with a variety of behaviors and diagnoses, autism being one of them” (Dillenburger & Keenan, 2009, p. 193).

In the application of ABA, an ABC, or Antecedent-Behavior-Consequence, analysis is commonly used to analyze behavior. Antecedents of behavior are stimulus events, situations, or circumstances that precede an operant response (Miltenberger, 2011). In laymen's terms, an antecedent is what was happening or what and who was

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present right before the behavior occurred. Behaviors are actions that can be defined in an observable, measurable, and repeatable way, or what is called an operational definition (Miltenberger, 2011). In a well-written definition of a target behavior, the behavior is described as clearly and concisely as possible and can even include examples and non-examples. For instance, a definition of aggression would be “aggression is defined as any instances in which student’s hands, feet, body or objects come in contact with another person in a forcible way out of the context of the activity. Example: Student hurls a book towards a peer. Non-example: Student throws a basketball toward a peer during PE” (Kelly, 2010). The “C” in ABC represents the consequence that is delivered by the environment immediately following the target behavior. A consequence is not necessarily a punishment, or negative stimulus, but the term used as any outcome or feedback that occurs immediately following the behavior.

To understand and modify behavior, it is important to analyze the antecedents and consequences. When the antecedents of a behavior are understood, the circumstances in which the behavior was reinforced and was punished can be more readily identified (Miltenberger, 2011). Since a behavior tends to occur more in situations in which it has been reinforced and less in situations where it has been punished, having this valuable information helps practitioners predict the situations and environments in which the behavior will be more likely to occur. Furthermore, when the consequences that are reinforcing have been identified, it allows practitioners to hypothesize a reason, or function, for the occurrence of the behavior. The commonly identified functions of behavior will be discussed in further detail in the Literature Review to follow.

Review of the Literature

There are many theories and factors that influence caregivers' decisions regarding their children with ASD and how to manage their challenging behavior. Although the literature covers a wide variety of such theories and strategies, this review focuses on functional assessment of challenging behavior. In order to expand the proposed intervention to its target audience in DCPS, literature regarding engaging caregivers in low SES areas and mobile support strategies will also be discussed.

Increasing effectiveness of caregiver involvement. Caregivers of children with ASD may benefit from training focused on the management of challenging behavior. Researchers found higher levels of stress in parents of children with ASD than in parents of children with almost any other type of disability or health problem (Osborne & Reed, 2009), which demonstrates that there is a need for high quality training to assist this particular population of parents in an attempt to decrease their stress level. When a parent or caregiver decides to invest their time and effort into attending a training seminar on ABA and challenging behavior, it is important to create content that parents will see the benefits from, relate to, and understand. The National Institute of Mental Health (2001) was able to identify parents' lack of skills in effectively engaging in the education and treatment of their children as a major challenge to implementing evidence-based practices. This enables the identification of the need for skills training for parents who have children with challenging behavior in order to close the parent involvement gap.

In the case of parents of children who have emotional disturbance, there is a discrepancy between availability of service and engagement by parents in activities aimed to promote their involvement. The current challenge facing the field is to develop practices with effective content and mechanisms that would result in increased family engagement. (Duchnowski et al., 2012, p. 49)

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Once parents attend training, it tends to lead to better outcomes for both parent and child (Suppo & Floyd, 2012) as parents become more fluent with techniques on how to work and help their child with a disability. An investigation into greater parent involvement allows an examination of cultural and environmental factors that may affect caregivers and children with ASD and other challenging behavior. “Parent education can address the issue of generalization, given that service providers often only see children in a restricted number of settings, such as a clinic room, while parents are able to provide learning opportunities for their child in many natural settings, such as at home and in the community” (Steiner, Koegel, Koegel, & Ence, 2012, p. 1218). Studies have demonstrated that caregivers have the ability to acquire skills and approaches to teach their children with ASD across a variety of areas, including diminishing target challenging behaviors and limiting restricted and repetitive behaviors (Steiner et al., 2012). Suppo and Floyd (2012) suggested that parents can take on a greater role in their child’s behavior intervention, revealing that parents can be successful as direct service providers to fulfill part of their child’s intervention needs. However, to first achieve a partnership with parents, schools and service providers must establish a relationship with the parent.

Sensitivity to parents and families. The issues surrounding parents’ feelings towards schools can affect the ability of a school to impact the parents. Parents can often feel as though educators and other school professionals do not value their opinion or knowledge that they provide about their child with special needs (Murray et al., 2013). It is essential to empower parents and caregivers by thinking of parents as educational partners. Although families of children with ASD need and use a broad range of

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services, access to these services is not equally available to all families (Suppo & Floyd, 2012). Irvin et al. (2012) found that parents and caregivers with a higher SES were more likely to enroll a child with ASD in ABA services than caregivers with a lower SES. Emmen et al. (2013) found that a lower SES was related to more psychological distress and more acculturation stress, which were both, in turn, related to less positive parenting. Washington, DC currently consists of a population with 18.6 % of people living in poverty compared to the national average of 15.4% (U.S. Census Bureau, 2013), translating to a significant population of parents with a low SES.

To reach all families, parents must feel as though their cultural and socioeconomic needs are being addressed. “Culture shapes behavior and standards of what is and is not acceptable behavior are culturally determined”. (Norbury & Sparks, 2013, p. 45). Undertaking attempts to change parent’s behavior without attending to the family’s value system is meaningless, and can prevent investment in the strategies presented (Norbury & Sparks, 2013). Steiner et al. (2012) note the importance of individual familial characteristics and recommend that family support should be individualized to fit the family’s values, goals, preference, routines, and traditions. For example,

“Families may reject intervention programs that involve following the children’s lead in play, talking about what children were doing, or engaging in pretend play, either because it is culturally unusual for adults to play with children or because the family circumstances are not conducive to free play time” (Norbury & Sparks, 2013, p. 46).

Pairing with caregivers and researching cultural practices may increase investment in behavioral skills training and implementation on the part of the caregiver.

If a parent is turned off by terminology used due to lack of knowledge or

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flexibility in cultural and family needs within training content, it may be less likely the family will implement the techniques presented. In order for parents to implement the strategies suggested to them by a school team, they must obtain a feeling of empowerment and of being in control of their child's challenging behavior. "Virtually every analysis of the empowerment construct notes that the experiences provided to and encountered by individuals either promote or diminish a sense of control over important life events" (Dunst & Dempsey, 2007, p. 306). Having cultural and socioeconomic sensitivity influence the construction of the curriculum is paramount in order for caregivers to access the training content. Once a caregiver feels comfortable with the individuals presenting the behavioral skills information, they may be more likely to be open to learning about using FBA, and implementing the strategies within their home environment

Functional analysis of problem behavior. A paradigmatic shift from stimulus presentation and response, or Stimulus-Response, presented by Watson (1913) towards the focus on functional analysis of behavior, began when B.F. Skinner started to examine how a consequence immediately following a behavior can have influence on the future form of that behavior. However, it was not until 1968, in the first edition of the Journal of Applied Behavior Analysis, that Baer, Wolf, and Rissley (1968) defined the field of ABA. With a publishing date in the late 1960s, the field of ABA is relatively young, at just over forty years old. It is imperative to put this budding field into perspective with typical behavior management techniques. Many parents learn how to manage their children from their own parents (Gillies, 2006). This means that management techniques can be passed down from generation to generation. Therefore, this relatively "new" way

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of looking at challenging behavior by utilizing a functional assessment approach has the potential to challenge generations of methodologies used to manage children's behavior.

The topography, or outward appearance, of challenging behavior can present itself differently from person to person. Challenging behavior can be defined as "behavior that creates a situation that is dangerous to the behavior themselves, other persons in their environment, or severely interferes with the person's access to education and other community services" (Lancioni, Singh, O'Reilly, Sigafoos, & Didden, 2012, p. 42).

There is a high importance on reducing challenging behaviors in individuals, particularly those with developmental disabilities, of which ASD is one, as they can have an adverse impact on the development and assimilation opportunities for this population (Dunlap et al., 2006). Interventions can be developed in order to reduce these dangerous and challenging behaviors, but what the intervention addresses can affect that success of the intervention itself. For example, a student may be engaging in challenging behavior to get out of completing an assignment, therefore spending time in a time out or the Principal's office allows the student time away from the work, therefore the intervention has the potential to be less effective. Those who practice ABA use interventions that address the function of the behavior, rather than solely the topography.

The first experimental analysis of functional behavior was done by Brian Iwata and his team in 1982, in the landmark article "Toward a functional analysis of self-injurious behavior." Iwata and his team were the first to determine the functions that cause behavior to occur. The work done by Iwata led to a major shift in focus toward an acknowledgment of the need for understanding the root causes of behavior before simply applying vigorous consequences (Dixon, Vogel, & Tarbox, 2012). The study completed

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by Iwata et al. (1982) is considered to be of great importance by those in the ABA field, so much so that it was republished by the *Journal of Applied Behavior Analysis* in 1994. By testing the subject's behavior under different conditions, Iwata et al. (1982) contrived the environment in order to test under which conditions the problem behavior occurred. The conditions tested were demand/academic, alone, play, and social disapproval. With the "play" condition acting as the control, Iwata et al. (1982) were able to identify the functions of the behavior based on observations under the various conditions. The functions identified are escape demand, access to tangibles, access to attention, and alone (automatic reinforcement) (Lancioni et al., 2012). From the research by Iwata et al. (1982) and others that followed, when conducting a functional assessment of behavior, the function of behavior can be identified as one of these four elements.

The target behavior elicited by an individual is maintained, or continues, because the environment continues to provide reinforcement for the function in which the behavior works. Individuals engage in certain behavior to meet the needs of certain functions. The "topography of behavior can serve different functions for different individuals" (Cooper et al., 2007, p. 502), which can make whole-group interventions less effective. Student 'A' may hit a teacher in order to escape a work demand while student 'B' may hit a teacher for attention. The behavior looks the same to the observer, but the functions the behavior serves are different. These findings are influential in how caregivers, educators, therapists, and anyone who works with challenging behavior approaches development of responses to the incidents of challenging behavior. Since 1961, 435 studies based on 981 individual functional analyses have been published (Beavers, Iwata, & Lerman, 2013). A functional analysis consists of actually testing the

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various conditions in a controlled manner to ascertain the causes and appropriate responses to a behavior rather than relying simply on assessment of observational data (Shumate & Willis, 2010). While conducting an experimental functional analysis may not be practical for school or home environments, a FBA is a descriptive and indirect method of determining the hypothesized function of a target behavior.

To conduct a functional behavior assessment, typically certain procedures are followed to gather information. The following is a summary of the procedures most frequently used to conduct a Functional Behavior Assessment. The person or persons conducting the FBA describe and define the target behavior in objective, observable and measureable terms. Then, indirect forms of information on the target behavior are gathered by interviewing individuals who work with the child. Additionally, direct observations of the child in the targeted environment (e.g. home, school) focusing on recording the antecedents and consequences occurring amidst the targeted behavior should transpire. When looking at the target behavior it is important to assess if the behavior is linked to a skill deficit or a performance deficit linked to a lack of motivation. Analyzing the aforementioned information, a hypothesis, or conjecture, on the function of the behavior is developed.

Validity of functional behavior assessment. Traditionally, behavioral interventions have used standardized methods in order to reduce problem behaviors with no consideration given to the variables that may be functionally related to the individual's problem behavior (Newcomer & Lewis, 2004). For example, when a classroom wide consequence to challenging behavior is a time out, children whose challenging behavior is a function of escape from a demand will only be reinforced by this consequence

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making it more likely to occur in the future. When using a FBA, the data collected attempts to establish a cause and effect relation between the target behavior and environment, whereas in more traditional psychological assessments, the data are a score (or scores) from a standardized test, which hypothesizes a construct within the child (Shriver et al., 2001). The central goal of the FBA is to identify environmental conditions that are associated with the occurrence or nonoccurrence of problem behaviors (Gresham et al., 2001). Typically, a completed FBA includes, consequences, identified antecedents, a hypothesis statement regarding the perceived function of the targeted behavior or behaviors, and an operational definition of the behavior (Scott & Eber, 2003).

Ingram, Lewis-Palmer, and Sugai (2005) conducted a study utilizing a “single subject ABCBC designs were used to demonstrate a functional relationship between student responding and function-based and non–function-based behavior intervention plans” (p. 224). The results of the study demonstrate that the implementation of FBA-based intervention plans was linked with larger improvements in decreasing the number of problem behaviors when juxtaposed against non-function-based behavior intervention plans (Ingram et al., 2005). Two important conclusions emerged from this work on the use of function-based interventions. First, the authors found that interventions based on information gained from a FBA can be more successful in reducing a child’s problem behavior than interventions that are not based on functional assessment information. Second, Ingram et al. (2005) determined that descriptive assessment procedures contributed to the development of effective function-based interventions. A functional behavior assessment is said to be descriptive because both direct observation and

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informant interview methods describe what is happening before and after the challenging behavior (Cooper et al., 2007).

In a study assessing the use of descriptive and indirect methods of assessment in a FBA, rather than an experimental functional analysis, Newcomer and Lewis (2004) found agreement between indirect and direct methods to identify primary functions, maintaining consequences, and environmental factors. The descriptive form of a functional assessment carries validity versus when the same target behavior is analyzed using a functional analysis. The results of this study are important in that valid and accurate results were produced during this study with less time-consuming methods than the experimental manipulations that are used in order to complete a functional analysis. These results are important in that they broaden the range of behaviors, situations, and data collection methods during occasions for which functional assessment technology is applicable.

Furthermore, the study carried out by Newcomer and Lewis (2004) provides additional evidence that indirect descriptive assessment strategies, or FBAs, are accurate in the design of interventions for children with behavior problems and for whom traditional approaches to behavior management may not have been as effective. However, for the use of FBAs to become more mainstream, it is imperative that their effectiveness remains even when experts are not part of the process (Scott et al., 2005). Training caregivers in the basic ability to assess behavior based on the function rather than the topography is an essential step to empowering caregivers to work with their child's challenging behavior, and making lasting and socially significant impacts on the child's life. Finding meaningful and accessible ways for caregivers to engage with

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practitioners and schools is a key step to successful caregiver and familial involvement.

Access to technology. The Pew Research Center reports that as of 2013, 91% of all adults in the United States own a cell phone, with at least 43% of those in a low SES bracket having a smartphone (a smartphone is defined as a mobile phone with an advanced mobile operating system; Smith, 2013). Today, Americans living in or near the poverty line are more likely to live in cell phone-only households, or a household with no fixed landline (Hu et al., 2011). Additionally, individuals who live in the above-defined cell phone-only households are more likely to have experienced numerous barriers to health care supports (Hu et al., 2011). This prevalence of cell phones, in comparison to landlines, supports the idea that access to this form of technology by families living in low SES areas is widespread. “It is possible that effectiveness of technology interventions would be greater with low-income families compared with programs delivered through in-person contacts because of the many barriers families face to recruitment and retention in onsite programs” (Swindle et al., 2014, p. 489).

The mobile nature of a technology intervention may be more flexible to the frequent physical moves and inconsistent schedules of many low-income families (Swindle et al., 2014). In the current digital age, technology may possess the components needed to possibly address the demand for accessible, inexpensive, and scalable interventions (Swindle et al., 2014). “Mobile technology’s low start-up cost, text messaging capabilities, and flexible payment plans make it attractive for use in supporting a range of interventions” (U.S. Department of Health and Human Services, Health Resources and Services Administration, 2014, p. 4). These combinations of low resource requirements paired with widespread mobile device availability across

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demographics increases the applicability of text message interventions to further generalize knowledge retention among caregivers in low SES areas when providing training on functional assessment of challenging behavior.

Summary

With the investigated research presented revealing the efficacy and validity of FBA when choosing behavioral interventions, training caregivers of children with ASD to acquire the skills to complete a FBA may benefit the caregivers and the child alike. Families of children with ASD may benefit from skill acquisition regarding functional behavioral intervention, as the research shows this population has higher levels of stress than families with any other disability category, and this can stem from feelings surrounding their ability to manage their child's behavior. Investing in the caregivers as the primary stakeholders in the child's life, improving relationships between caregivers and school personnel, as well as utilizing convenient mobile technologies, has the potential to improve the quality of life for the child and the family as a whole. An investigation on the current feelings of caregivers of children with ASD in DCPS will allow for a greater understanding of the need for an intervention based on functional assessment. In the next chapter, an overview of a needs assessment administered to caregivers, key DCPS Administrators, and organizations supporting DC families is presented and conclusions are discussed.

Chapter 3: Needs Assessment

Due to the significant rates of children being identified with ASD, (Baio, 2012) many families may be in need of assistance in working with the challenging behaviors that can accompany a diagnosis of ASD. In the District of Columbia, DCPS has focused on the implementation of ABA in its classrooms for students with ASD. However, successful implementation of ABA in classrooms does not necessarily translate to parent education and understanding of ABA techniques. Parents of children with ASD may benefit from training focused on the management of challenging behavior. Researchers found higher levels of stress in parents of children with ASD than in parents of children with almost any other type of disability or health problem (Osborne, 2009), which demonstrates that parent training may be one way to support these important stakeholders. Providing families with training on how to best manage the challenging behaviors that accompany ASD may be a part of increasing the family and student's quality of life.

In addition, Irvin et al. (2012) found that parents and caregivers with a higher SES were more likely to enroll a child with ASD in ABA services than caregivers with a lower SES. Furthermore, a lower SES has been found to be related to more psychological distress, which can be related to less positive parenting (Emmen et al., 2013). Washington, DC currently consists of a population with 18.6 % of people living in poverty when the national average of 15.4% (Census Bureau, 2013), translating to a significant population of parents with a low SES. With the current population demographics in DC and prevalence of ASD, approximately 1400 children may be affected by Autism (Census Bureau, 2013), in a district with 89 schools receiving Title I

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federal funding ("Title I Information," 2013) out of 114 total schools. Therefore, the following investigation into the current availability of and barriers to access training for caregivers of children diagnosed with ASD in DCPS who have a low SES will show the need for an evidence-based behavior curriculum aimed at these important stakeholders.

Objective

The objective of this needs assessment was to determine the current availability and varieties of parent training programs available for caregivers of children with ASD living in Washington, DC. Furthermore, determining the knowledge base of parents of children with ASD in DCPS on ABA and FBA may inform the type of intervention that could benefit these particular stakeholders.

Participants

Three different respondent groups were identified to determine the needs of caregivers of students with ASD in DCPS. The respondents included: (a) governmental and non-governmental organization who serve families in Washington, DC, (b) DCPS Central Office administrators, and (c) caregivers of students with ASD who attend DCPS. The caregiver group of 29 respondents had at least one child in a self-contained Autism classroom in the DCPS system. Washington, DC classrooms who received surveys spanned Elementary, Middle, and High School grade levels, and all schools received Title I funding. The nine respondent service organization demographics varied, with the size of organizations ranging from 11-25 employees to over 60 employees, with varied focus on the type of support provided. The supports ranged from legal assistance to social skills training. For the DCPS administrators, both individuals were employed by DCPS and work in the Office of Specialized Instruction in leadership positions.

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Methodology

This section discusses the methodology used in conducting the needs assessment. The participant groups, instruments, and data analysis processes are discussed. Subsequent sections are broken down to further expand upon the three targeted participant samples, with the targeted research questions for each group identified.

Caregivers of children with ASD. Caregivers represent an underutilized resource when attempting to change challenging behavior in children with ASD. To determine current knowledge of ABA, comfort level with challenging behavior, and characteristics of families of children with ASD, parents were surveyed. Questions specifically included:

- (a) Research Question 1a: How comfortable are parents managing their child's challenging behavior as reported on a Likert scale?
- (b) Research Question 1b: What are the parent's knowledge level of Special Education and particularly ABA and related components?
- (c) Research Question 1c: How involved with their child's school are parents?

Governmental and non-governmental organizations. To document the programs and resources available to caregivers outside of the school district offerings, organizations other than DCPS should be questioned. The multiple choice and open response questions specifically included:

- (a) Research Question 2a: How many advocacy/parent assistance groups are active in DC with the mission of assisting families who have a family member diagnosed with ASD?
- (b) Research Question 2b: How many advocacy/parent assistance groups hold

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trainings for parents specifically focused on managing challenging behavior?

(c) Research Question 2c: What types of content (e.g., informational, support, etc.) are offered in the trainings?

(d) Research Question 2d: What type of curriculum guides parent training offered by these organizations?

DCPS employees. To describe the extent and types of training and support available to parents through DCPS, the Director of Inclusive programming as well as the Autism Program Manager were interviewed using semi-structured open-ended questions. Questions specifically included:

(a) Research Question 3a: In what ways is DCPS currently using any evidence-based practice to increase family engagement?

(b) Research Question 3b: What are strategies DCPS uses to decrease barriers to access parent programming for its low-income families?

(c) Research Question 3c: How many trainings on Autism and Challenging behavior are offered by DCPS per school year?

(d) Research Question 3d: What events have seen the most success in parent attendance? The least?

Recruitment

Various recruitment techniques were utilized for each respondent group. For caregivers, surveys were distributed among 10 classrooms across three wards in the District of Columbia. Teachers were given written and verbal instructions on distribution (Appendix A), with an emphasis on ensuring that caregiver's participation was voluntary. Teachers were permitted to assist caregivers in filling out or reading the questionnaire if

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requested by the caregiver. An incentive was provided to teachers that if they were able to get fifty percent participation from caregivers in their classroom. They were entered in a lottery for a gift certificate to an educational store for classroom supplies.

For government and non-governmental organizations, recruitment strategies were two-fold. First, an Internet search was conducted to identify organizations that stated on their website that a portion of their work was dedicated to assisting families with children with disabilities. Second, organizations were recruited based on their participation with the Autism Advisory Board in the District of Columbia. Respondents were self-selected by those who chose to respond to the survey.

For DCPS employees, the recruitment strategy included requesting and scheduling one-to-one interviews with the Director of Inclusive Programming in the Office of Specialized Instruction, as well as the Manager of the Autism Program.

Instruments

Surveying is “the process of collecting data through a questionnaire that asks a range of individuals the same questions related to their characteristics, attributes, how they live, or their opinions” (O’Leary, 2014, p. 202). Surveys were used to collect information from each respondent group; however, the delivery of surveys was varied. Caregivers were provided with paper surveys composed of twenty-three questions Likert-scale questions (Appendix B). Organizations were asked to complete an online survey composed of twenty questions which were a combination of Likert scale and open-ended questions (Appendix C). The DCPS employees were interviewed in person using the same 11 semi-structured open ended questions (Appendix D).

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Informed Consent

Informed consent was granted by all participants in this needs assessment investigation. Caregivers and DCPS employees were given paper copies of informed consent to sign (Appendix E and Appendix F). For organizations, informed consent was given by the completion of the survey; however, permission to gain passive consent was granted by the Institution Review Board for this project (Appendix G).

Data Analysis

To analyze the data collected from this study, two approaches were taken. The quantitative data collected from the organizational and caregiver surveys was analyzed by descriptive statistics. The qualitative data gathered from interviews with DCPS employees was examined using content analysis. The results of these data analyses are discussed in further detail in the *Results* section of this needs assessment inquiry.

Results

The findings of the needs assessment study are described in the following sections. Each respondent group will be addressed in their own section.

Caregivers of children with ASD. The respondents of caregivers of children with ASD were comprised of 87% females with 68% of respondents identifying as single parents (unmarried). In regards to FBAs, 53% of respondents reported that they had never heard of this type of assessment before. Thirty-three percent of respondents had never heard of ABA before, while 20% had heard of ABA, however they reported they did not know what it meant. In regards to managing their child's challenging behavior, 40% of respondents reported they felt "extremely comfortable managing their child's challenging behavior at home," while 40% of respondents responded they were

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“not comfortable,” or “slightly” comfortable managing their child’s challenging behavior in public.

Governmental and non-governmental organizations. Of the nine respondent organizations, all participants reported they served families who have a child diagnosed with ASD, and all respondents reported they offer parent-training programs in some format. While two organizations offer trainings on education curriculums, none of the organizations utilize an evidence-based curriculum specifically designed for parent education focused on challenging behavior. The respondent organizations reported a spread in the frequency of training offerings from once a week to 2-4 times per year. In all respondent’s surveys, the organizations selected “referred by doctor or medical facility” as one way in which they receive clients.

DCPS employees. The respondents from the interviews of DCPS employees reported that currently, DCPS works with the Flamboyant Foundation, a private family foundation in Washington, DC, to increase parent engagement, but it is in a limited number of schools. In the recent history of the Office of Specialized Instruction, the most successful parent events occur at a school-based level as opposed to events held by DCPS Central Office. More specifically related to the programming from the Autism Team, in the past, the program specifically has partnered with local Pediatricians for a lecture series, though it was reported by the program manager that it has not done so in the past two or three years. The most successful parent programming for the Autism Program, according to the program manager, occurred when one coordinator spent half of their caseload performing home visits with parents, a job role which no longer exists on the team.

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Summary

The results from the needs assessment show that all caregivers are not aware of functional behavior assessments, and may not feel completely comfortable managing their child's behavior in public settings. Additionally, while parent-training exists in the District of Columbia for parents of children diagnosed with ASD, there is little available with a specific focus on functional behavior assessment, a knowledge gap reported by the participant caregivers. From the DCPS perspective, little is offered currently to provide information or training to the specific target population of caregivers of students with ASD, with most of the resources for caregivers provided by the partnership with the Flamboyant Foundation. With these results, it is hypothesized that there is a need to provide caregivers in Washington, DC with the opportunity to receive information regarding functional behavior assessment.

Chapter 4: Intervention Literature Review

Children with developmental disabilities may be more susceptible to presenting with challenging behavior than their typically developing peers (Dillenburger & Keenan, 2009). Research indicates that nearly 50% to 70% of children with developmental delay present with co-occurring behavioral and emotional problems (Johnson et al., 2007). To this end, parents of children with disabilities may have increased challenges working with their student. In a sample of parents of children with ASD in DCPS, the author found only 40% of respondents reported they were comfortable managing their child's behavior in a public venue (Kenny, 2014). Even with this increased need for support there continues to be a disparity between services available and parent involvement for students with challenging behavior. Irvin et al. (2012) examined the child and family characteristics thought to affect the amount and type of services received by children diagnosed with ASD. The study found that higher SES families are more likely to have more services with a higher dosage than their lower SES counterparts (Irvin et al., 2012). It is essential that systems that will increase caregiver training attendance and knowledge retention are an integral component of a behavioral skills training intervention focused on challenging behavior.

While parent involvement is now mandated by federal statutes, (Duchnowski et al., 2012) successful ASD parent involvement programs in lower SES areas may still prove challenging, partially due to the fact that parents with special needs children have different needs than the parents of a general education student. Accordingly, separate programming is needed to address the needs of the parents of these students with special needs (Murray et al., 2013). Establishing a caregiver training curriculum pertaining to

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the functional assessment of challenging behavior is only one aspect of the success of a program. Focus on the involvement of families, as well as strategies that increase attendance at trainings and retention of presented material on challenging behavior will provide the framework for a successful caregiver training program on functional assessment of challenging behavior.

Literature Review

This literature review explores the components of the intervention that address the need for training caregivers in Washington, DC on functional assessment of challenging behavior. While training caregivers on functional assessment of challenging behavior and the application of a text messaging reminder program is the focus of this particular research project, the scope of this literature review is expanded to include research that examines contingencies to encourage attendance and participation in trainings of caregivers with low socioeconomic status.

Behavioral skills training on functional behavior assessment. In a review of over 35 articles citing use of a FBA to decrease challenging behavior, Wood et al. (2009) found parents were “either were not included in intervention development and implementation or were included in a limited capacity” (p. 76). “Research has shown that parents who were involved in their children’s FBA and intervention processes gained experience using behavioral supports” (Dunlap et al., 2006, p. 76). Fettig and Barton (2014) reviewed 13 studies on parent’s abilities to implement functional assessment-based behavior interventions discovering that “FA-based parent intervention could not be considered as an evidence-based practice” (p. 59) due to concerns regarding study rigor and absence of fidelity across all 13 studies investigated. In addition, insufficient and

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limited research exists addressing the issue of teaching parents to conduct a functional assessment and design an intervention for problem behavior based on the results (Shayne & Miltenberger, 2013). McNeil, Watson, Henington and Meeks (2002) and Shayne and Miltenberger (2013), offer the limited investigations into involving caregivers in the data collection, analysis, and intervention design of a function-based behavior assessment. Both studies produced positive results, however, research remains scant on a study which incorporates both the identification and planning paired with the implementation of a function-based intervention by parents and caregivers.

To that end, deeper investigation into the study conducted by Shayne and Miltenberger (2013) was completed to explore replication and generalization strategies. Shayne and Miltenberger (2013) completed a study in order to enhance the body of research on educating caregivers on the use of FBAs. Using a group design, Shayne and Miltenberger (2013) conducted behavioral skills training to teach caregivers how to conduct antecedent, behavior, and consequence (ABC) behavior data recording, write a summary statement based on the data collected, and select applicable treatment choices (Shayne & Miltenberger, 2013). Eight caregivers took part in one class where a trainer used instructions, modeling, rehearsal, and feedback to teach the aforementioned skillsets. Prior to, during, and immediately following instruction, the participants viewed videos showing a problem behavior serving varying functions in the context of a parent-child interaction and participated in activities designed to test mastery on ABC recording, summary statement, and treatment choices. The participating caregivers were again shown the videos one to two weeks following instruction as well as asked to respond to the questions to determine the percentage of correct responses. The data collected on

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caregiver responses demonstrated that it is possible for caregivers to acquire skills in utilizing FBAs (Shayne & Miltenberger, 2013).

As a result of the instruction, a majority of the caregivers raised their scores on all three targeted skills and, at the very least, all participating caregivers raised their scores in at least one content area during post-instruction testing. The results of this study show that caregivers can be taught the skills needed to conduct a functional assessment; however, Shayne and Miltenberger (2013) noted limitations to their study and suggestions for modifications and replications of their work in potential future research studies. The suggestions are to include videos that represent behaviors that have multiple functions, to increase the number of practice opportunities with the instructor, and to address generalization issues and examine if these skills will generalize to the participants' home environment with their own children.

For further expansion of research on the topic of training caregivers on FBA, consideration of these recommendations may produce more valid and generalizable results. However, in order to add to the body of research on this topic, first caregivers must be recruited to participate, which may be more challenging in low SES environments, such as Washington, DC.

Caregivers as investors. Parents and caregivers are the primary decision makers when it comes to choosing the educational services their children receive. By demonstrating clear evidence that parent behavior trainings provide a measurable return on their investment of time and effort, economic principles can be applied to influence best practices for incentivizing stakeholders to invest in behavior training seminars based on ABA. Additionally, for a continuum of care across the home-to-school divide,

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schools that invest in evidence-based interventions, such as ABA, are reinforcing to parents that this approach is an integral part of their student's success at school (Dillenburger & Keenan, 2009).

The rise in prevalence of ASD elicits the need for additional services and places a substantial burden on governments to fund programs for the increasing number of children diagnosed with ASD (Chasson, Harris, & Neely, 2007). If school districts cannot show they are implementing a student's Individualized Education Plan with fidelity, the district is not providing a free and appropriate education to the student. When this happens, a school district may end up paying for the student to attend a private or non-public school if they cannot correct the infraction and provide the appropriate services. Paying for outside placement for these students can be a costly endeavor. Since 2011, the number of students who receive specialized instruction who were served outside of DCPS in a non-public or private school was reduced by 20% (Brown, 2012). This drop in non-public enrollment translates to a savings of approximately \$45 million (Brown, 2012). A factor that contributes to these numbers is DCPS's investment in ABA in its self-contained classrooms of students with ASD (Megan Gregory-Morley, personal communication, July 16, 2014). The field of ABA is still on the verge of being considered "mainstream." ABA implemented in schools, and is recognized by the Surgeon General (1999) as an effective treatment for individuals with ASD (United States, 1999).

In some studies, the pairing of the use of ABA in self-contained classrooms with an increase in the retention of students has shown a return on the investment in ABA curriculum and support in these classrooms by reducing the number of specialized

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instruction hours needed per student (Greenberg & Martinez, 2008). Utilizing Early Intensive Behavioral Intervention (EIBI), a form of ABA, across classrooms has the potential for savings projected into the millions of dollars, while keeping students in their neighborhood schools (Jacobson, Mulick, & Green, 1998). Jacobson et al. (1998) found that for students with ASD who achieved normal functioning following EIBI, each provided their school district with an average cost savings of \$282,689 through the age of 21 years. Additionally, Greenberg and Martinez (2008) completed a study where, after spending one year in an ABA classroom, 95% of the preschool-aged students moved to a less restrictive environment. While it was a small sample size of 24 students, the implication of this percentage of children moving out of a restrictive classroom setting is significant. Greenberg and Martinez (2008) use the information gleaned from their work to hypothesize that the monetary savings could be estimated to reach the hundreds of thousands of dollars compounded over the years when students are able to be served in a less restrictive setting.

Once schools have invested in ABA, the next crucial aspect of improving a student's challenging behavior is to continue the work that is being done at school within the student's home and community. In ABA, learning is broken down into small units and taught in discrete ways in order to teach larger skills that can be used in a generalized environment. For example, a child may first learn to imitate the action of waving before it is introduced as a response to a greeting, or to initiate a request for attention from a peer or adult. One goal of a special education teacher is to move their students into the least restrictive environment possible, to allow for more time with typical peers and access to general education teachers and curriculum. Greenberg and Martinez (2008)

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were able to demonstrate that utilizing ABA does just that by moving a large percentage of students into a less restrictive environment after just one year of exposure to ABA.

Parents must utilize a lot of time and effort in caring for their student with special needs. The training must be able to help the parents spend more quality time with their child, all with less effort. If a student is receiving different environmental consequences in response to their behavior across various settings, the target behavior may be maintained due to the fact that challenging behavior is strengthened by variable consequences (Cooper et al., 2007). For instance, when the teacher reacts differently to the target behavior than the parent reacts, that target behavior may increase in frequency, duration, or magnitude. An investment from parents does not necessarily mean monetary investment. Similar to how school districts can see that EIBI can provide lower long-term costs that typical special education cannot, so too will parents see ABA working for them, not only in terms of time and effort, but also in receiving a benefit from their child's progress. Parents may be more likely to attend trainings because they are seeing both economic and behavioral benefits for their family. The benefit for a parent does not necessarily have to deal in dollars and cents as the commodity that parents are using to acquire a return on their investment in a training program is their time and effort.

Engaging families in low socioeconomic urban areas. It is essential to empower parents and caregivers by thinking of parents as educational partners. Educational leaders have become more conscious of the evidence that traditional parental involvement norms and programs, such as volunteering in classrooms, holding bake sales, and midday parent association meetings, are not very effective when it comes to engaging working families of diverse backgrounds (Auerbach, 2010). Discrepancies

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between race and SES can be correlated with variable degrees of familial involvement in a child's academic career. Henderson et al. (2007) found that parents who identified as Caucasian of higher SES have a higher likelihood of being more inclined to be involved with their child's school. This constituency of parents participates in activities such as attending school events, volunteering, taking part in governance, and following through on educators' requests. Conversely, Henderson et al. (2007) determined that parents of low SES or parents of color have a higher likelihood of having infrequent communication with educators, supporting their child's education indirectly behind the scenes, and receiving a generalized education without pushing for their child's specific academic and behavioral needs. Furthermore, they are less likely to challenge their schools to advocate for their children. This faction of parents is limited partially by "linguistic and logistical barriers, cultural discontinuities, a sense of intimidation, and legacies of distrust" (Auerbach, 2010, p. 730).

Caregivers, along with school-based and district leaders, should examine and question their respective assumptions about the fundamental goals of education, the proper roles of families and educators in schools, and challenge the mindset over who may qualify as a school insider versus outsider (Wilson, Riehl, & Hasan, 2010). Cooper (2009a) discusses the importance of performing necessary culturally sensitive work that combines factions of stakeholders with diverse socioeconomic, cultural, and professional backgrounds in a joint effort to enact social justice and transform public education institutions' traditional approach to family engagement. The shared work of gathering these diverse stakeholders together may be facilitated by a strong leader, and by doing so, will in turn help to instill greater levels of trust among educators, families, and

communities.

Effective contingencies. While progress has been shown on parent involvement programs across the nation, there is a gap between the services and programs available to parents of children with challenging behavior and their participation in these empowerment programs (Duchnowski et al., 2012). The work of behavior analysts who use ABA in the corporate and business world is called Organizational Behavior Management. Organizational Management is subset of the management field, that employs principles of organizational behavior from psychology and the experimental analysis of behavior, from the field of Applied Behavior Analysis to organizations with an intention of improving individual and group efficacy.

Strategies for increasing attendance and retention by parents of children with challenging behavior can borrow from research completed to increase worker productivity, attendance, and application of newly trained skills. As family involvement continues to be a priority for educators, the government continues to invest more money in these programs (Duchnowski et al., 2012). Success or failure, and subsequent continuation or discontinuation of funding, is often contingent upon the number of individuals that the program serves. Education agencies are often searching for methods to attract new caregivers and to keep previously attending caregivers coming back (Gravina, Wilder, White, & Fabian, 2012).

Various contingencies can be put in place as strategies to improve attendance. In an individual contingency, a participant earns reinforcement or rewards for attendance based solely on the participant's own attendance. In group contingencies, the reinforcement or rewards are dependent on every member of the group participating in

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order for anyone in the group to receive reinforcement or rewards. Research has found that group contingencies can be effective interventions for improving the attendance and punctuality of adults in work settings (Berkovits, Sturney, & Alvero, 2012).

An alternative intervention to group contingency is the implementation of a raffle program. Gravina et al. (2012) found that several studies have used a raffle to increase desired behaviors in a variety of settings. In a lottery intervention, individuals who sign in, or participate, or elicit the target behavior, get a chance to receive reinforcement or a reward. The chance or opportunity is a ratio between the number of individuals who participated and the number of individuals selected. Gravina et al. (2012) found that the expected value of the reward was more influential than the probability of winning the reward in determining whether or not participants entered. Therefore, finding rewards that are highly motivating to the target population, which in this case are caregivers of special needs children, is significant to maximizing caregiver participation.

Incentivizing stakeholders. There have been a multitude of studies that have examined contingencies that may provide strategic insight into increasing caregiver attendance at behavioral skills training programs. In a variety of studies, monetary incentives have been shown to function as an effective reinforcement to encourage a variety of positive behaviors when they are delivered contingent upon the performance of the target behavior (Koffaranus et al., 2013). While implementing a job-skills training program with unemployed and homeless adults, Koffaranus et al. (2013) looked for differences in attendance, performance, and accuracy among participants who received or did not receive monetary incentives for participation. The results confirm the benefits of payment contingencies in increasing achievement in a job-skills training program,

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engagement in a job-skills training program, and performance quality while engaged in a job-skills training program.

The strongest evidence to support this is depicted by the overall achievement of the groups who received paid training. Within the study groups, the paid participants completed a median of 91 steps in the behavioral skills training of a typing program within the 26-week training period, respectively, and the no-incentive group completed just 10.5 steps (Koffaranus et al., 2013, p. 589). While shown to be effective for a job-skills training program, these results also have implications for behavioral skills training programs with similar program components and participant demographics.

Díaz and Pérez (2009) take monetary incentives a step further, in a study on the use of small financial incentives (ten-dollar voucher) as a strategy to increase attendance and reduce dropout in a family drug-prevention program applied in the school context. Participants were 211 pupils (aged 12–13) and their parents. The results show that small financial incentives can be useful to increase the attendance of families in prevention programs and to reduce dropout.

However, and possibly of more importance, in the second part of the study, maintenance sessions were offered with the stipulation ahead of time that no incentive would be provided. Díaz and Pérez (2009) found that those individuals who had received incentives for the initial trainings had a significant increase effect on attendance at maintenance sessions as compared to those individuals who had not received incentives.

The researchers hypothesize that the incentives persuaded potential participants who were originally hesitant in regards to committing, and that, as the program progressed, “the positive and interesting elements of the sessions themselves came to act

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as reinforcers” (Díaz & Pérez 2009, p. 1996). The findings of Díaz and Pérez (2009) are critical when a change is observed in participants from attendance due to extrinsic motivation, or the ten-dollar incentive, versus intrinsic motivation, or the content of the maintenance sessions itself. By pairing powerful, meaningful, and applicable content to the families with monetary incentives, they may develop an intrinsic desire to attend more training sessions when external incentives are not offered and value the information itself.

Remote supports to promote knowledge retention. Text messages can deliver information instantly and at a relatively low cost, and therefore have the potential to be a powerful tool for communication (Gazmararian, Elon, Yang, Graham, & Parker, 2014). “The features of mobile technologies that may make them particularly appropriate for providing individual level support to consumers relate to their popularity, their mobility, and their technological capabilities” (Free et al., 2013, p. 2). The rapid expansion of mobile health (mHealth) programs leveraging text messaging in programs such as text4baby and TXT4tots provides an opportunity to improve health knowledge, behaviors, and clinical outcomes, particularly among hard-to reach populations (U.S. Department of Health and Human Services, Health Resources and Services Administration, 2014). These programs could be applied to parent training for reminders of training dates, communication between participants and trainers, and assistance in generalizing skills from school to home environments.

In TXT4tots, targeted caregivers of children ages one to five were provided with a library of brief, evidence-based messages focused on nutrition and physical activity, with content based on Bright Futures Guidelines, which were disseminated through text

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messaging (Health Resources and Services Administration, 2014). Evans, Wallace, and Snider (2012) conducted a study examining the impact of text messages on behavior change and knowledge acquisition among low-income women regarding prenatal health, and associated behaviors in the program text4baby. The study found that following the mobile intervention, women who received text messages regarding their prenatal health were nearly three times more likely to have beliefs that they were prepared for motherhood when compared to the participants who did not receive text messages (Evans et al., 2012, p. 224). This research shows that with increased knowledge and remote supports, the women in low-income areas gained higher confidence in their abilities. However, even with the growing use of mobile supports, there is little specific evidence to how this technology can be applied to assist caregivers of children with challenging behavior.

Therefore, paired with the prevalence of technology use in low socioeconomic areas, an intervention utilizing the concept of skill reinforcement via text message logically lends itself to be applied to behavioral skills concepts for caregivers as a convenient and inexpensive avenue of interaction. The incorporation of text messages for the proposed intervention provides an effective training content reinforcement mechanism whereby participants in a behavioral skills training program have frequent text message reminders of content to promote retention and further understanding and generalizability.

Summary

In response to caregivers of children in the DCPS ASD Program reporting that they struggle to manage their child's behavior and have a lack of familiarity with ABA

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curriculum utilized in the classroom, the literature examined has crucial implications.

Understanding behavior by its function rather than topography, or functional assessment, allows for more effective interventions to be applied to challenging behavior.

Incorporating behavioral skills training methods on how to conduct ABC behavior data recording, write a summary statement based on the data collected, and select applicable treatment choices, will enhance the proposed parent training intervention.

Caregiver involvement in education is now mandated by several federal statutes (Duchnowski et al., 2012). This strengthens the argument that the caregivers-as-educators concept be continued, particularly for students with challenging behavior. Caregivers of children with challenging behavior are learning new strategies on parenting that may conflict with previously held beliefs on how children should be raised, like punishment-based procedures. Involving caregivers with low SES may be a challenge; however, research from the field of Organizational Behavior Management suggests that raffles, group contingencies, and monetary incentives can improve training session attendance in adults.

The research needed to establish the effectiveness of a training curriculum is multifaceted. The first measurement will look at whether caregivers who participate in trainings are able to increase their knowledge and retain the functional assessment skills they learn during in-person training. Secondly, text message reminders of training content will be utilized to measure if information is retained for a longer period of time following the initial training. An additional measurement will analyze caregiver training attendance and retention with and without incentives. Further research in these areas of focus can lead to the development of an engaging, effective, and replicable caregiver-

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training program.

Chapter 5: Intervention Procedure and Program Evaluation

The intervention training titled, “It’s the why not the what when it comes to challenging behavior,” looked to combine systems that increased caregiver training attendance, and increased caregiver’s earned scores on a questionnaire regarding functional behavior assessment and caregiver attitudes and options. Further data collection occurred on the use of text messaging for skills generalization following an in-person workshop.

Objective

The objective of the study was to evaluate the effectiveness of the intervention on increasing caregiver scores on a survey questionnaire on functional assessment of challenging behavior, and measure the score retention when the use of a text message program is applied.

Research Questions

The primary research questions to be investigated included:

- (a) What is the rate of attendance at in-person trainings when incentives for attendance, such as dinner, childcare, a backpack full of school supplies, and a grocery store gift card are used?
- (b) Are high-level concepts, such as functional assessment of challenging behavior, able to be broken down into a training, so that caregivers are able to score higher on a questionnaire assessment?
- (c) Following one in-person training, does the use of text message push-reminders promote higher rates of information retention?
- (d) Does participation in a training intervention on functional behavior assessment

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affect caregiver attitudes and/or opinions?

Hypothesis

It was hypothesized that all caregivers will increase their test scores on functional assessment of challenging behavior, and those who receive text messages with content reminders in the Experimental Group would retain a higher volume of information in relation to the Comparison Group.

Research Design

This study was carried out with a non-equivalent groups pretest and posttest design. In this experimental research, the use of in-person training for caregivers, incentives, and text message supports (independent variable) was monitored, and change in test scores on a questionnaire on the content of the training on functional assessment of challenging behavior (dependent variables) was measured.

Target Participants

Sample size. The maximum number of participants to be enrolled in the study was 50 participants, with 26 eventually attending the in-person portion of Intervention Phase I. The effect size utilized to determine the sample size needed was a study that measured the outcomes of a training and support program for adults who interact with children with ASD (Strain & Bovey, 2011). Strain and Bovey (2011) identify the target population as teachers or parents who have children that were preschool-aged with a diagnosis of ASD. The effect size for that study (Strain & Bovey, 2011) was reported by the What Works Clearinghouse (U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse, 2012) to be .72. Following an analysis of effect size and power using g-power software to conduct a t-test, the participant size needed for

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the intervention to achieve an effect size of .72 with a power of .8 is 18 participants (Faul, Erdfelder, Buchner, & Lang, 2009). With a planned target of 20 participants in each experimental and control group, the intervention has a sufficient sample size to mirror the .72 effect size in Strain and Bovey (2011).

Selection procedures.

Criteria for participants to be included in the study. Participants who were eligible to be included in the study were recruited from a population with certain characteristics. Participants must have been a caregiver for a student in the DCPS Autism Program. Caregiver is operationally defined as: an individual who spends time as the sole caregiver for a student with ASD in the home environment including Biological Parents, Grandparents, Foster Parents, Adoptive Parents, Aunts, Uncles, Step-parents, or regular babysitters/nannies. Additional characteristics included that the participant be a caregiver to a student within the program who attends a DCPS school that receives Title I funding. The relationship between the caregiver to a student was verified and crosschecked with the student's teacher as well as with the DCPS student IEP database when applicable. Recruitment materials were distributed to Title I schools who at the time served the Autism Program, and whose Principals agreed to participate as a hosting site for the study.

Criteria for participants to be excluded from the study. Caregivers of students who were not in the Autism Program in DCPS were excluded for reliability and control group purposes. Furthermore, caregivers who have a student attending a school that does not receive Title I funding were also excluded, as the intervention targeted caregivers in low SES areas to whom resources may be more limited than higher SES peers.

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Recruitment

Incentives for participation. The following incentives for participation were placed on the recruitment flyers in order to message to participants the items they could expect to receive for their attendance. The participants at each training site were given dinner when they first arrived, and a backpack full of school supplies for their child once they returned the final questionnaire during the training. Caregivers were also provided with access to free childcare provided by Coordinators and teachers in the Autism Program. Lastly, participants were provided with compensation in the form of gift cards upon return of the posttest from Intervention Part II.

School based recruitment. Schools selected for participation contributed their time, facilities, and assistance of school staff on a voluntary basis at the discretion of the Principal (Appendix H). Teachers in participating schools who teach in Autism classrooms were asked to put flyers (Appendix I and Appendix J) advertising the program in children's backpacks. The teachers received verbal and written instructions (Appendix K) on how to explain the study and converse with caregivers regarding their participation as strictly voluntary.

Participant Population

A total of 26 participants attended the in-person training for Intervention Phase I following implementation of the abovementioned recruitment strategies. Of those 26, 14 participants completed all phases of the Intervention, including the pretest, Intervention Phase I posttest, and Intervention Phase II posttest. Tables 1-6 demonstrate the demographics represented by the 14 caregivers whom participated in all phases.

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Setting

Each training was held at an individual school site, which had previously agreed to host the training in collaboration with the investigator (Appendix H). Table 7 depicts the number of attendees at each site, as well as the time of the training and whether or not the training site was experimental or a comparison group. Free childcare, was provided at each site by members of the Autism Team and teachers from the Autism Program at each site.

Materials

Training materials included:

- (a) Informed consent forms (Appendix L and Appendix M),
- (b) Data collection instruments (demographics questionnaire, pretest, posttest I, and posttest II) (Appendix N and Appendix O),
- (c) Prezi Presentation “It’s the Why Not the What When It Comes to Challenging Behavior,”
- (d) Handout with content on functions of behavior, antecedents, behaviors, consequences, and reinforcement,
- (e) Visual aid for the “STOP” reminder (Stop, Take a Breath, Observe, Act), and
- (f) Technology for presentation, including computer and projector.

Intervention Part I: All Participants

Arrival. Participants arrived at the room designated for training and were offered if they had any children with them, for the children to be dropped off at childcare. Once they had returned, participants were offered dinner and a seat within the room. At the commencement of the training, the investigator introduced herself, and explained the

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schedule for the day, as well as the informed consent form. Following the completion of written informed consent, all caregivers were then asked to complete a demographics questionnaire, as well as the pretest questionnaire. Participants were instructed to complete the questionnaire to the best of their abilities, with emphasis on the fact that they were not expected to know the material on the pretest. To participants, the pretest was always described as a “questionnaire” in order to attempt to mitigate pressure or anxiety that performing well was expected. Once the demographics and initial pretest questionnaire were complete, the training portion began.

Training. Each training session included information presentation in the form of a Prezi, on-going discussion, scenario presentation, and video modeling. While the training occurred, participants received handouts about the topic for reference during the training, which were collected prior to the posttest. Training content was adapted from and loosely based upon training materials developed by the *Center on the Social and Emotional Foundations for Early Learning*, out of Vanderbilt University, and covered definitions of behavior, functions of behavior, antecedents and consequences to behavior, reinforcement, and a reminder strategy for home use as seen on the “It’s the why not the what when it comes to challenging behavior” training syllabus in Appendix P. The investigator then described how the participants would take the questionnaire one more time at the training, and they should expect another questionnaire to be sent home in one month, where if they completed that questionnaire, a five-dollar gift card to a local grocery store would then be given to them.

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Post Intervention Part I: All Participants

Immediately following completion of the in-person training while still in their seats, the visuals and reference materials were removed from the table, and all participants were administered the same test questions as presented in the pretest to assess any changes in knowledge of the caregiver participants following the in-person training component. Participants were asked to “do their best” and the material was again referenced as a “questionnaire” rather than a test to mitigate any test-taking anxiety. Once the posttest was complete the test was collected and a backpack full of school supplies was then offered to each participant. At this point the training was complete.

Intervention Part II: Experimental Group

For four weeks after the completion of the in-person training session, the caregivers in the Experimental Group only received text messages, with reminders of content covered in Intervention Part I as an independent variable of the experiment. Text messages were sent 11 times and were no longer than three sentences in length (Appendix Q). The quantity of text messages was based on the Intervention Part II length of one month, with variable rates of texts sent per week, with no messages sent on the weekends resulted in 11 text messages. The messages were sent using a Google Voice phone number created specifically for the program. This no-cost platform allowed for text messages to be sent simultaneously with the same exact content to participants in the Experimental Group. Prior to joining the study, participants were notified of any potential charges that may be incurred due to receiving the messages.

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Intervention Part II: Comparison Group

For four weeks after the completion of the in-person training session, the Comparison Group had no contact from the researcher regarding the concepts presented during the in-person training. The existence of a Comparison Group allows for assessment of the effects of the text messaging independent variable examining the four-week posttest results.

Post Intervention Part II

Four weeks following completion of the in-person training (Intervention Part I), all participants were given the same posttest (Appendix O) to assess any changes in knowledge of the caregiver participants after the gap in time from the training session to the second posttest. Tests were sent home from school with the caregiver's student, and once returned to the researcher, a five-dollar gift card to a local grocery store was given to the caregiver.

Assessment Tools and Measures

The evaluation design for measuring knowledge regarding analyzing challenging behavior using functional assessment of behavior used a pretest-posttest design. Following the model utilized by Shayne and Miltenberger (2013), whose study this intervention hopes to further expand upon, participants were given a pretest prior to engaging in any portion of the in-person teaching. There are three sets of data to be analyzed to measure this objective. The test was administered to both groups before the training, immediately after participating in the in-person training, and approximately four weeks after the training. The questions focused on the aspects of application of analyzing challenging behavior using functional assessment of behavior.

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The three aspects that were tested are basic terminology, theory, and identification of antecedents, behaviors, and consequences of target behavior. The questions were developed by the researcher based on the training material created, with influences from the Shayne and Miltenberger (2013) study.

Treatment Fidelity

In order to increase the reliability of drawing causal inferences between the posttest results and the group training and text messages, it was essential to ensure that the caregiver training was implemented with high fidelity. Treatment fidelity checklists were developed for each of the training sessions to insure procedural integrity. To assess the fidelity of treatment, an impartial observer conducted fidelity checks on all training sessions to ensure that all caregiver-training procedures were followed.

Data Collection

Test design. The caregivers in each participant group were given a written test comprising qualitative and quantitative questions. The test was broken into sections with questions on basic terminology, theory, and identification of antecedents, behaviors, and consequences of target behavior. There were 11 quantitative questions based on content, and seven qualitative questions. The questions were written at an eighth-grade reading level (Rossi, Lipsey, & Freeman, 2003), with no more than four questions on a page. While technical language was used in relation to functional assessment of challenging behavior, no terminology was used that is not within the training curriculum. Furthermore, questions included content that clarified the context within the test design. The estimated time it took for the participants to complete the test was 10-15 minutes.

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Coding. The pretest and posttests resulted in quantitative and qualitative data. For the quantitative data, results were coded as a 1 or a 0 for correct versus incorrect responses. For qualitative data, Likert-scale responses were coded as the number of the response such as 5 for Not interfering at all; 4 for Slightly interfering; 3 for Somewhat interfering; 2 for Very interfering; 1 for Extremely interfering; and 0 for Prefer not to respond.

Analysis. Participants were compared within and across Experimental and Control Groups using the percentage of correct responses as a comparison group design (Wholey, Hatry, & Newcomer, 2010). The correct responses for quantitative data were compared across the entirety of all three tests, as well as within Intervention Phase I and Intervention Phase II. The scores for each testing period were entered into a data analysis program to calculate significance of score changes across the three points in time. A paired two-sample t-test was used to analyze results. Unlike a between-subject design in which differences between subjects are not controlled and are treated as error, in this experiment the same subjects are tested in each condition (Girden, 1992), as in this experiment, an examination of changes in mean score across various testing periods.

Strengths and Limitations

When evaluating the design to measure the outcomes of an intervention, it is important to be conscious of the strengths and limitations that accompany the design.

Strengths. The strengths in the design of the outcome measurement system are multifaceted. The design of the test ensures that the same content was measured across groups, therefore the control versus experimental factors comes into play when the Comparison Group does not experience four weeks of post-training text messages. This

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design allows the researcher to compare the final posttest results between the two groups, giving significance to the overall effectiveness of the text message intervention. The results show how both groups changed from pretest to posttest, whether one, both, or neither improved, remained constant, or regressed over time.

If the Experimental Group showed an improvement or remained consistent, then it may be hypothesized that the intervention contributed to these scores. The comparison group participants who do not receive the text messages for four weeks following the training and prior to the final posttest served as the mediating variable. It was hypothesized that this group would not retain as much of the material as the group who receives text messages. The intervention has strength in the ability to limit the access to text messages to the Experimental Group only.

Limitations. As with many interventions, awareness of the limitations of the research design as well as the limitations of the implications of the results is a critical step in intervention methodology design (Rossi et al., 2003).

Test design. For this intervention, a limitation exists within the composition of the testing instrument. Since there is not a standardized method of testing an individual's knowledge on the key concepts, theory, and application of functional assessment of challenging behavior, the reliability of the instrument may be weaker than if a previously tested instrument is used.

Confounding variables. An additional challenge to this program design is limitations on confounding variables once the training is complete (Rossi et al., 2003). With the programmatic design there is limited control by the researcher to prevent any further learning that the participants seek out on their own. This may threaten the internal

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validity of the results as it will be unknown whether participants researched the topic of functional assessment of challenging behavior on the internet, their local library, or sought out a behavior analysis professional to further generalize this information into the home environment.

Targeting low SES participants. A limitation on the target population only containing low SES participants existed. Caregivers with students who may not have received FARMS were included due to data acquisition constraints placed on the researcher from the DCPS research approval process. The researcher did not have access to FARMS information on students in order to identify which students to exclude from receiving recruitment at each school site. Title I schools were used to target a large portion of the population fitting the low SES demographic to mitigate this limitation to the best of the researcher's ability.

Threats to external validity. Potentially the most consequential limitation on the design of evaluating the outcomes of this intervention is the threat to external validity. While the threats to internal validity are minimal, the threats to external validity can be compromised in the process. There is limited opportunity in this study of judging whether the process of pretesting and the initial training actually influenced the results due to the fact that there is no baseline measurement against any group of individuals that remained completely untreated.

Site selection. Sites were randomly pre-assigned to be either the comparison or experimental group due to constraints upon the investigation. DCPS requested that participants be notified prior to arrival they would be receiving text messages due to the potential charges text messaging could incur. Additional considerations were requested

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by DCPS on ethical implications of one group of participants receiving more intervention material than another therefore to mitigate this issues whole sites either received the experimental intervention, or the whole site was in the comparison group, receiving no intervention.

Sample size. The target sample size was limited to four school sites due to resource constraints. This investigation was self-funded by the researcher, which limited the amount of incentives available. In order to ensure that all participants had equal access to incentives, the participant pool was restricted due to budgetary constraints.

Summary

The methodology for measurement of treatment outcomes regarding the effect of text messages for retention of training content across time has the potential for statistical significance and strong internal validity; however, the researcher must remain cognizant of the limitations of the study's design.

Chapter 6: Findings

This chapter presents the results of the statistical data analysis, summarizes the results of the intervention, discusses limitations, and presents recommendations for further investigation. The purpose of this study was to determine the extent to which an in-person training can increase knowledge of functional assessment of challenging behavior and furthermore, the extent to which a text messaging program promoted increased retention of learned knowledge after a lag time following the in-person training. SES considerations were made with contingencies attempted to promote and retain participants across the duration of the study.

Results

Results data include survey results from the 14 participants who completed all phases of the intervention, which included returning the final posttest questionnaire four weeks after they attended the in-person training. This equates to a 54% survey response rate out of the original 26 participants, and with the average paper survey response rate typically ranging between 20% and 60% (Whitehead, Groothuis, & Blomquist, 1993), this 54% return rate is considered to provide a representative, but overall small, sample from which to analyze data results. Within the 14 participants who are included, seven represent the Comparison Group, and seven represent the Experimental Group. The difference between the two groups is that in the four weeks following the in-person training, the Experimental Group received 11 text messages from the researcher with content including information covered in Intervention Phase I (Appendix Q) prior to completing the final posttest. The Comparison Group received no communication from the researcher in the four weeks following the training prior to completing the final posttest. The following data analysis will examine quantitative questions across all three

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tests, pretest, posttest Intervention Phase I, and posttest Intervention Phase II. The qualitative questions will also be compared across the pretest, posttest Intervention Phase I, and posttest Intervention Phase II.

Research Question One Results

Research question one questioned what the rate of attendance would be if certain incentives were in place. The incentives delivered at the in-person training for Intervention Phase I were, dinner for both caregiver attendees and children, free childcare, and a backpack full of school supplies. Table 8 displays the rate of attendance across the four training sites when the abovementioned incentives were utilized. Out of all eligible attendees per family, the rate of attendance at the in-person trainings across the four sites ranged from 30% to 46%. Incentives for attendance were made available across both Comparison and Experimental group sites due to research constraints added by DCPS to address equality to all participants.

Research Questions Two and Three Results

Of the 18 questions on the administered tests, 11 questions were quantitative in nature, measuring the discrete knowledge of participants regarding functional assessment of behavior. Research question two looked to investigate if high-level concepts, such as functional assessment of challenging behavior, were able to be broken down into a training, so that caregivers scored higher on a questionnaire assessment. Research question three examined whether following one in-person training, did the use of text message push-reminders promote higher rates of information retention from participants who received the Intervention. The following results present the data across the 14 participants analyzing the Experimental Group results in relation to the

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Comparison Group results. The statistical significance of the data discussed below is only in terms of the significance within the 14 participants' test results. This data does not speak to the statistical significance of the study overall; however, further examination of the results shows strength within the data that was acquired.

Table 9 depicts the results of the Comparison Group and Experimental Group participants on the 11 quantitative questions from the Pretest, Posttest Intervention Phase I, and Posttest Intervention Phase II. The results show that the mean scores of both groups increased across the pretest and Posttest Intervention Phase I. When comparing the mean scores between the Posttest Intervention Phase I and Posttest Intervention Phase II, the mean scores of the Experimental Group only decreased by .43, from 10.00 to 9.57, while the Comparison Group mean dropped 2.28, from 9.14 to 6.86. As the objective of Intervention Phase II was to retain test scores across Phase I and Phase II, these results suggest that with only a .43 change in mean score as compared to 2.28, the Experimental Group appears to have retained higher volumes of information when compared to the Comparison Group.

Table 10 depicts the results of the paired two sample *t* test, which compares the Pretest scores to the Posttest Intervention Phase I scores, and the Posttest Intervention Phase I scores to the Posttest Intervention Phase II scores, for both the seven Comparison Group participants as well as the seven Experimental Group participants. The results of the paired two sample *t* test for the Comparison Group ($p < .001$) as well as the Experimental Group ($p = .002$) suggest that within the acquired results, there appears to be measurable increase in the test scores by both the Comparison Group and the Experimental Group between the Pretest and the Posttest Intervention Phase I. In

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contrast, when comparing the results of the Posttest Intervention Phase I to the Posttest Intervention Phase II, there appears to be a measurable decrease between the Comparison Group's scores due to the resulting p value of .005, whereas the Experimental Group's resulting p value of .29 suggests that there is no measurable difference between their scores from Posttest Intervention Phase I and Posttest Intervention Phase II. Therefore, these two p value results suggest that the Comparison Group's scores decreased due to absence of the text message intervention, while the Experimental Group's scores did not significantly change due to the presence of the text message reminders received between Intervention Phase I and Intervention Phase II.

Table 11 depicts the results of the two sample t test, which compares the seven Comparison Group participants' scores to the seven Experimental Group participants' scores on the Pretest, Posttest Intervention Phase I, and Posttest Intervention Phase II. The results of the two sample t test show that there appears to be no measurable difference in the scores between the Experimental and Comparison Groups at both the Pretest ($p = .38$) and Posttest Intervention Phase I ($p = .40$). However, when comparing across group scores for the Posttest Intervention Phase II, $p = .04$ suggests that there is a measurable difference between the Comparison Group's scores on the Posttest Intervention Phase II and the Experimental Group's scores on the Posttest Intervention Phase II, again owing to the fact that the Experimental Group received text message reminders between Intervention Phase I and Intervention Phase II while the Comparison Group did not receive text message reminders.

Research Question Four Results

Research question four investigated if participation in a training intervention on functional behavior assessment affect caregiver attitudes and/or opinions. Of the 18 total questions on the administered tests, seven questions were qualitative in nature, measuring the impressions, feelings, and comfort levels of participants on a variety of topics including FBAs, interacting with their child, and text message supports. The following results present the data across the 14 participants analyzing the group as a whole, as well as the Experimental Group results in relation to the Comparison Group results when pertinent, which is further discussed in detail below.

Time of day. In order to get a better sense of what time of day caregivers felt they experienced difficulty with their child, Figure 1 displays the results when they were asked, “What time of day at home do you experience the most difficulty with the child of concern?” The results of this question shows that caregivers experience difficulty throughout the day, emphasizing the challenges they experience with a child with ASD.

Comfort managing child’s behavior. To get a better sense of how comfortable caregivers feel managing their child’s behavior, Figure 2 displays the results when they were asked “Are you comfortable with managing the child’s challenging behavior (examples: hitting, kicking, etc.) at home?” and Figure 3 displays the results when they were asked “Are you comfortable with managing the child’s challenging behavior (examples: hitting, kicking, etc.) in public?” The results of these questions show that caregivers reported that they have more comfort managing their child’s behavior in the home in contrast to managing the behavior in public.

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Responding to challenging behavior. To learn if caregivers feel they could do more to help their child, Figure 4 displays the results when caregivers were asked, “Do you agree with the following statement? ‘I feel like I could do more to help my child by the way I respond to their challenging behavior.’” The results of this question shows that caregivers acknowledge their current limitations when managing their child’s challenging behavior.

Cellphone use. Related to cellphone use and reminders, Figure 5 shows the results when participants were asked to respond to the question, “I feel my cellphone is a good way for me to be reminded about information I have learned.” Participant responses from the Experimental and Comparison Group from Intervention Phase I were compared to the answers from the Experimental Group and Comparison Group from Intervention Phase II. The results show that the Experimental Group, who received the 11 text messages across the four-week time period, all responded that they ‘agree’ or ‘agree very much’ that their cellphone is a good way to be reminded of information following the intervention.

However, it is important to note that the results indicate that participants of the Experimental Group answered “agree” or “agree very much” during Intervention Phase I, even though the results increased to more responses under “agree very much” in Intervention Phase II. This may indicate the potential influence of recruitment flyers stating they would be receiving text messages, suggesting that prior to their deciding to attend the training these participants responded at higher rates of positivity to receiving text message reminders. The Comparison Group remains spread across response options for both Intervention Phase I and II; therefore, an inference may be made that

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those who received the text messages gained more positive feelings towards receiving information in this format after participation in the program, with consideration to the possible confounding variable of the recruitment flyers being an important part of the data analysis process.

Discussion

The purpose of this intervention was to explore the effects of an in-person training on functional behavior assessment for caregivers of children with ASD, as well as the effectiveness of a text messaging program to promote retention of information as measured by questionnaire scores. Results of the data show that participants gained information through the in-person training, increasing their scores from the pretest to the posttest following Intervention Phase I (Table 9). These results indicate that even when considering the spread of education levels across the 14 participants ranging from High School Graduate level education to participants with post-college educational levels (Table 5), the training material was offered in a way that made information regarding functional behavior assessment accessible to caregivers in order to increase their scores on the questionnaire. As ABA continues to become more prominent in its use with children with ASD, it is important to note that after a single two-hour training, participants were able to learn the material and improve their scores.

For Intervention Phase II, the results demonstrate that the Experimental Group participants who received 11 text messages in the month following Intervention Phase I had better results on the Intervention Phase II Posttest than the Comparison Group (Figure 6). Furthermore, for those who participated in the text message intervention there was a noted change in their feelings towards text message supports (Figure 5).

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After participating in receiving text messages, the Experimental Group all responded that they “agree” or “agree very much” that text messages were a good way for them to be reminded about what they had learned in a training.

Limitations

Recognizing the constraints on generalizability, applications to practice, and utility of the abovementioned findings, is an imperative step in the data analysis process. In the examination of the research design and results, the following limitations were noted.

Non-Response Bias. This study may be prone to limitations due to the effects of attrition in relation to non-response bias for Intervention Phase II. There was a 46% non-response rate between Intervention Phase I and Intervention Phase II. This falls into the higher end paper survey return rates that typically range between 20% and 60% (Whitehead et al., 1993). Attrition effects in cohort surveys involve biases in the sample that could lead to questions of validity of Intervention Phase II results, even when contingencies such as gift cards upon return of the survey were offered.

Selection. When nonequivalent groups are selected, it is expected that they may differ on one or more characteristics prior to the study. Although the pretest scores between the Experimental and Comparison Groups were similar, it cannot be assumed that there was no selection bias or difference between the groups. The pretest averages could be similar by chance or the groups could differ on any number of characteristics that are not measured by the pretest, but nevertheless have an effect on the posttest scores.

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Skill acquisition. This study is limited to teaching the discrete knowledge regarding functional behavior assessment, and does not address nor measure the participant's ability to apply the newly acquired knowledge with their own child. The effects of the text messaging intervention suggest that this mode of communication increases knowledge retention and may be incorporated into future research in skill acquisition; however, this study cannot speculate as to the application of function behavior assessment by participant caregivers within their home and community settings.

Sample size. While the targeted participant sample size for both the Experimental Group and the Comparison Group was 18, the achieved sample size was seven for the Experimental Group and seven for the Comparison Group. Consequently, this may limit the power of the results, leading this study to be an investigation into the effects of this study's methodology.

Recommendations

Recommendations based on the results of this study have implications for application within the DCPS organization. Due to the positive test scores and retention rates that the Experimental Group displayed, it is recommended that the "It's the why not the what when it comes to challenging behavior" training program be replicated across the entirety of the DCPS Autism Program caregiver population with the incorporation of the text message reminder component. While a posttest following Intervention Phase II may not appear to be necessary, it is highly recommended to continuously measure and monitor the effects of the training program. As continued success is seen, it is recommended that the training be expanded to the Behavior and Education Supports Team, the Early Learning Supports Team, and the Independent

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Living Supports Team, all within the Academic Programs of the DCPS Division of Specialized Instruction.

After caregivers acquire an increased knowledgebase of functional behavior assessment, it is recommended that as a next step, the skills of conducting a functional behavior assessment are taught and the remote technology support of text messages are applied to support caregivers in application of functional behavior assessment with their child. The “It’s the why not the what when it comes to challenging behavior,” training provides a solid base for a skill acquisition and generalization program to be attempted within DCPS. Mirroring the intervention program where an increase in test scores on functional assessment of behavior, the skill acquisition program is recommended to be implemented in phases with continuous measurement of effectiveness.

In addition, for future research expansion, this study could be replicated using different combinations of duration and frequency of text messages to find the most effective delivery rate that achieves the highest caregiver knowledge retention.

Summary

With about one in 88 children having been identified with ASD according to estimates from the Centers for Disease Control’s Autism and Developmental Disabilities Monitoring Network (Baio, 2012), many families are in need of assistance in working with the challenging behaviors that can accompany a diagnosis of ASD. The purpose of this study was to address the problem of practice identified in DCPS of parents of children diagnosed with developmental disabilities who often struggle to effectively support their children’s challenging behavior. Without access to parent training addressing the functional assessment of problem behavior, these parents lack the

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framework and tools necessary to successfully implement behavioral interventions based on function rather than topography with their children in the home environment. In addition, the SES of parents can play a significant role in the implementation of behavioral interventions that children receive; therefore, this problem of practice focused on parents of children with developmental disabilities who attend DCPS, where a large percentage of families fall within a low SES band.

In response to this problem of practice, an intervention was implemented that analyzed data collected from a caregiver training on functional assessment of challenging behavior to determine the extent to which the training enabled an increase in test scores on a questionnaire developed on the training content. Further data collection surrounding the use of text message supports in retention of newly acquired knowledge following the in-situ training was tested. The results of the intervention demonstrated that caregivers were able to acquire new knowledge about functional behavior assessment, and that the use of a text message reminder program was able to lessen the drop off of knowledge retention to a minimal level.

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Table 1

Gender of Participants

Measure	<u>Comparison Group</u>		<u>Experimental Group</u>		Total	Percent
	Site A	Site B	Site C	Site D		
Female	4	3	3	2	12	86%
Male	0	0	1	1	2	14%
Prefer not to respond	0	0	0	0	0	0%
Total	4	3	4	3	14	100%
Percent	29%	21%	29%	21%	100%	

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Table 2

Relationship to the Child

Measure	<u>Comparison Group</u>		<u>Experimental Group</u>		Total	Percent
	Site A	Site B	Site C	Site D		
Biological Parent	4	2	3	3	12	86%
Adoptive Parent	0	0	0	0	0	0%
Grandparent	0	1	0	0	1	7%
Foster Parent	0	0	0	0	0	0%
Legal Guardian	0	0	0	1	1	7%
Relative	0	0	0	0	0	0%
Other	0	0	0	0	0	0%
Total	4	3	4	3	14	100%
Percent	29%	21%	29%	21%	100%	

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Table 3

Age of Participant

Measure	<u>Comparison Group</u>		<u>Experimental Group</u>		Total	Percent
	Site A	Site B	Site C	Site D		
Under 18	0	0	0	0	0	0%
18-25	0	1	0	0	1	7%
26-30	0	0	0	2	2	14%
31-40	3	0	3	0	6	43%
41 and over	1	2	1	1	5	36%
Prefer not to respond	0	0	0	0	0	0%
Total	4	3	4	3	14	100%
Percent	29%	21%	29%	21%	100%	

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Table 4

Racial Identification

Measure	<u>Comparison Group</u>		<u>Experimental Group</u>		Total	Percent
	Site A	Site B	Site C	Site D		
American Indian or Alaska Native	0	0	0	0	0	0%
Asian	0	0	0	0	0	0%
Hispanic	0	0	0	1	1	7%
Black or African American	4	3	2	2	11	79%
Native Hawaiian or Other Pacific Islander	0	0	0	0	0	0%
White (Not Hispanic)	0	0	2	0	2	14%
Total	4	3	4	3	14	100%
Percent	29%	21%	29%	21%	100%	

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Table 5

Educational Level

Measure	<u>Comparison Group</u>		<u>Experimental Group</u>		Total	Percent
	Site A	Site B	Site C	Site D		
Less Than 12th Grade	0	0	0	0	0	0%
High School Graduate/GED	0	1	1	0	2	14%
Some College	3	1	0	1	5	36%
College Graduate	1	1	3	0	5	36%
Post-College	0	0	0	2	2	14%
Other	0	0	0	0	0	0%
Total	4	3	4	3	14	100%
Percent	29%	21%	29%	21%	100%	

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Table 6

Free and Reduced Meals (FARMS) Enrollment

Measure	<u>Comparison Group</u>		<u>Experimental Group</u>		Total	Percent
	Site A	Site B	Site C	Site D		
Yes	3	3	2	3	11	79%
No	1	0	2	0	3	21%
Total	4	3	4	3	14	100%
Percent	29%	21%	29%	21%	100%	

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Table 7

Training Sites

School Site	Number of In-Person Attendees	Time of Training	Group
A	8	6:30pm	Comparison
B	5	6:30pm	Comparison
C	6	3:30pm	Experimental
D	7	3:30pm	Experimental

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Table 8

Rate of Attendance per Site

School Site	Number of In-Person Attendees	Number of Eligible Attendees	Rate of Attendance
A	8	26	30%
B	5	12	41%
C	6	17	35%
D	7	15	46%

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Table 9

Quantitative Questions Results

Group	<u>Pretest</u>				<u>Posttest Intervention Phase I</u>				<u>Posttest Intervention Phase II</u>			
	<i>n</i>	<i>M</i>	<i>SD</i>	Range	<i>n</i>	<i>M</i>	<i>SD</i>	Range	<i>n</i>	<i>M</i>	<i>SD</i>	Range
Comparison	7	3.57	1.72	0-5	7	9.14	1.86	6-11	7	6.86	2.48	2-10
Experimental	7	4.43	1.81	1-6	7	10.00	1.83	6-11	7	9.57	1.62	7-11

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Table 10

Paired Two Sample t Test Results

Group	<u>Pretest/Posttest Intervention Phase I</u>		<u>Posttest Intervention Phase I/II</u>	
	$t(6)$	p	$t(6)$	p
Comparison	-11.58	<.001	4.38	.005
Experimental	-5.12	.002	1.16	.29

Note. The Pretest/Posttest Intervention Phase I Comparison Group paired two sample t test null hypothesis states that the Comparison Group's Pretest score equals its Posttest Intervention Phase I score. The Pretest/Posttest Intervention Phase I Experimental Group paired two sample t test null hypothesis states that the Experimental Group's Pretest score equals its Posttest Intervention Phase I score. The Posttest Intervention Phase I/II Comparison Group paired two sample t test null hypothesis states that the Comparison Group's Posttest Intervention Phase I score equals its Posttest Intervention Phase II score. The Posttest Intervention Phase I/II Experimental Group paired two sample t test null hypothesis states that the Experimental Group's Pretest score equals its Posttest Intervention Phase I score. Alpha equals .05.

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Table 11

Two Sample t Test Results

	<u>Pretest</u>		<u>Posttest Intervention Phase I</u>		<u>Posttest Intervention Phase II</u>	
Across Group Comparison	$t(12)$	p	$t(12)$	p	$t(12)$	p
Comparison versus Experimental	-0.91	.38	-0.87	.40	-2.43	.04

Note. The Pretest two sample t test null hypothesis states that the Comparison Group's Pretest score equals the Experimental Group's Pretest score. The Posttest Intervention Phase I two sample t test null hypothesis states that the Comparison Group's Posttest Intervention Phase I score equals the Experimental Group's Posttest Intervention Phase I score. The Posttest Intervention Phase II two sample t test null hypothesis states that the Comparison Group's Posttest Intervention Phase II score equals the Experimental Group's Posttest Intervention Phase II score. Alpha equals .05.

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

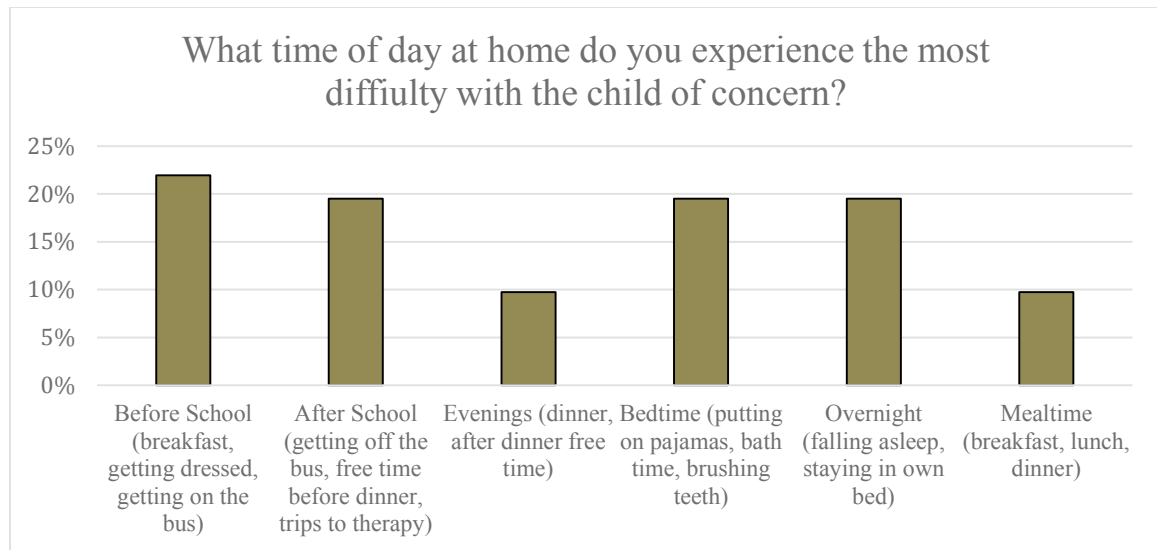


Figure 1. Time of Day Results ($n = 14$).

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

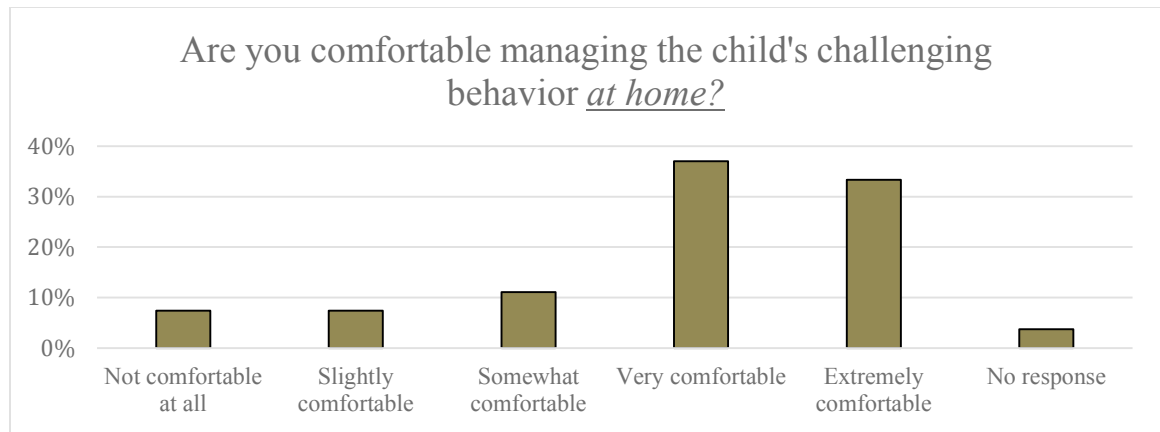


Figure 2. Comfort Level at Home Results ($n = 14$).

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

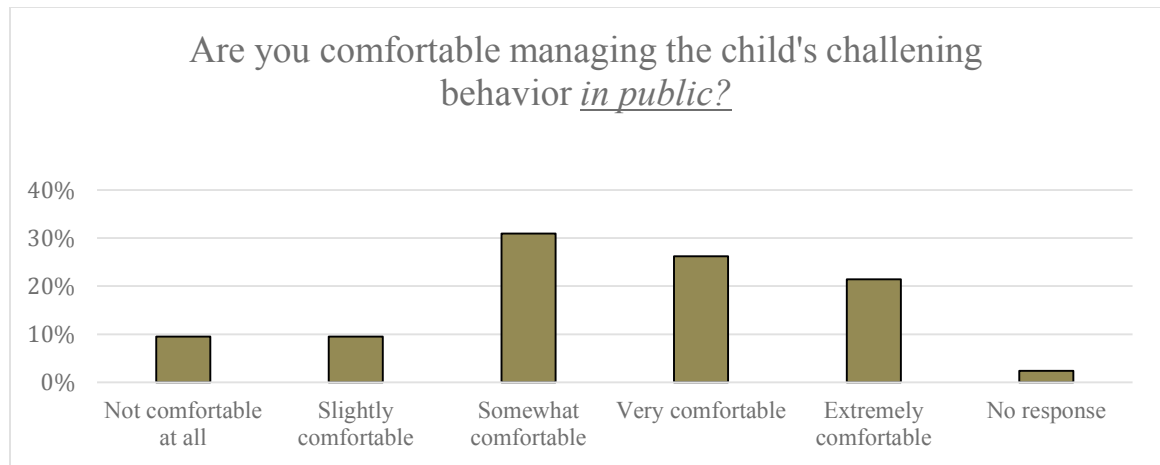


Figure 3. Comfort Level in Public Results ($n = 14$).

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

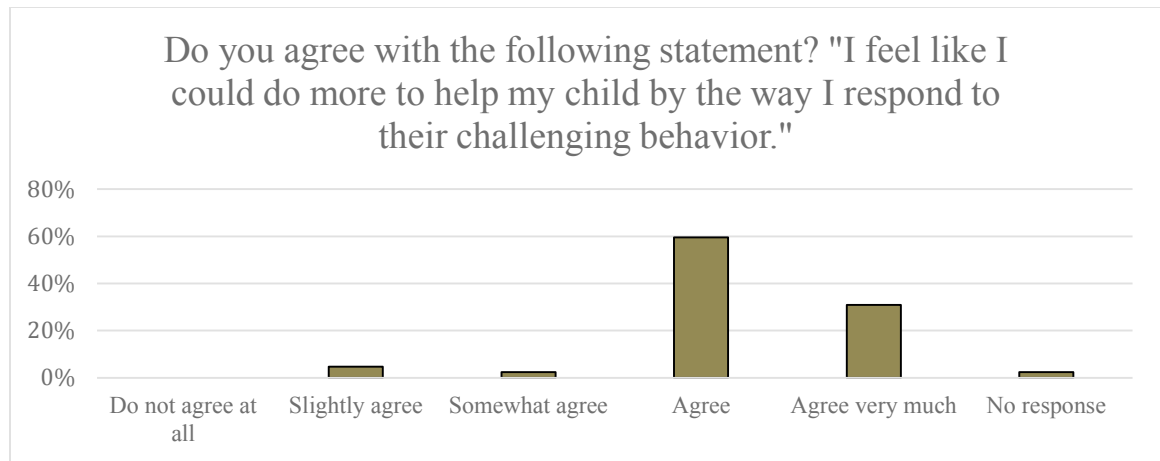


Figure 4. Responding to Challenging Behavior Results ($n = 14$).

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

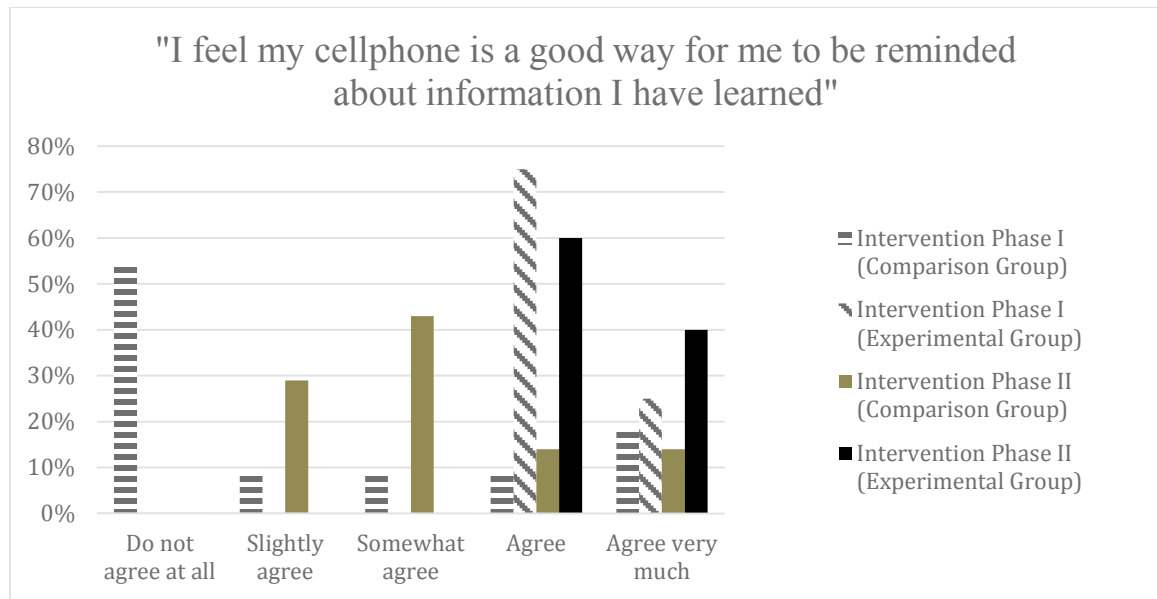


Figure 5. Attitude Toward Cellphone Reminders Results ($n = 14$).

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

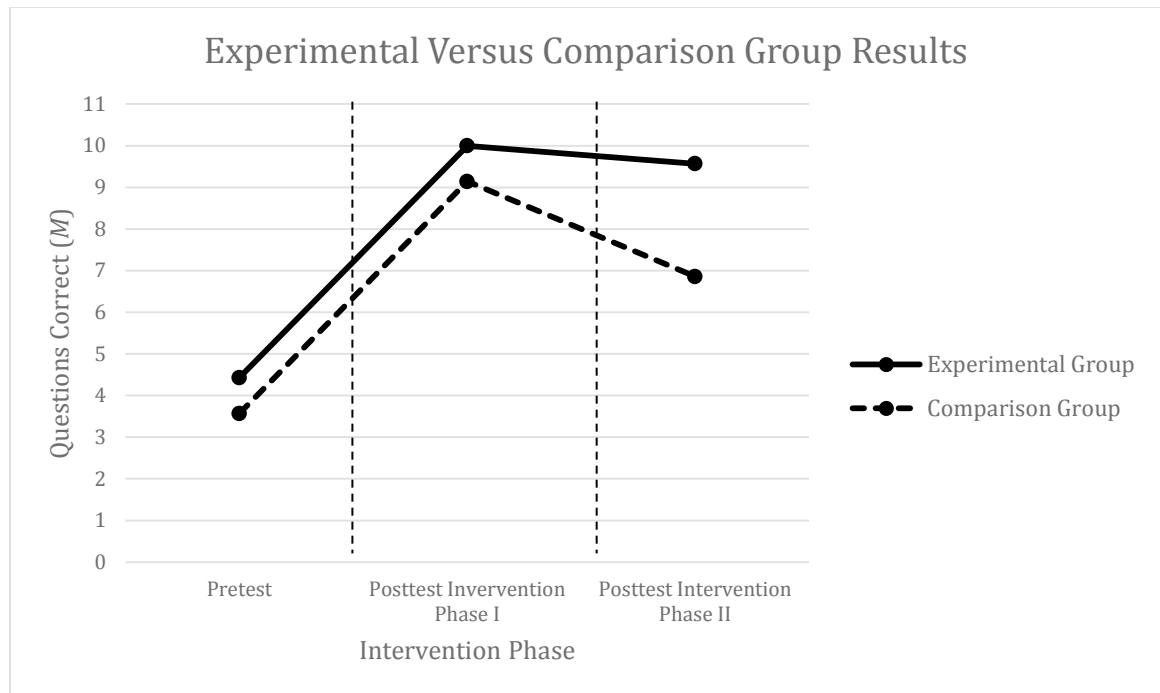


Figure 6. Experimental Group Versus Comparison Group Results.

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Appendix A

Needs Assessment DCPS Teacher Instructions

Thank you for your help with the DCPS parent needs assessment.

The survey is to be completed by one caregiver in the student's home life who interacts with the student frequently. This can be sent home and returned to school, or you may offer for parents to complete the survey over the phone with you if that is more comfortable for them. As the survey is completely voluntary, parents should not feel pressured to complete the survey, while friendly reminders to return the survey are ok, no parent should feel it is mandatory to offer their answers. I will be using the information to inform the parent programming decisions moving forward so any opinions and suggestions are welcomed- but please emphasize that participation is completely voluntary.

If you help the parent complete the survey via phone, please indicate on the consent form that verbal consent was gained, with the date and your signature.

If a caregiver indicates they would like to be contacted in the future, please detach their information from the survey and place the responses in the envelope provided.

As a thank you, all teachers who receive 50% participation from families in their class will be entered in a raffle to receive a \$50 lakeshore gift card. This is for participation, not in order to pressure your parents to respond!

Surveys will be gathered the week after spring break. You will be emailed with a pick-up day, but it will be no later than April 25th.

If you have any questions I can be reached at: clara.kenny@dc.gov or ckenny5@jhu.edu

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Thank you!!!!

I understand and will abide by the guidelines as outlined here:

Teacher Name

Date

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Appendix B

Needs Assessment Caregiver Survey

Instructions: Responses will require you to check a box. Please read each question carefully. Answer each question to the best of your ability.

This section consists of eight questions pertaining to you, the caregiver.

1. Gender of caregiver (check one)

- ☐ Female
- ☐ Male
- ☐ Prefer not to respond

2. Age of caregiver (check one)

- ☐ Under 18
- ☐ 18-25
- ☐ 26-31
- ☐ 31-40
- ☐ 41 and over

3. Relationship status (check one)

- ☐ Married (married, cohabitating)
- ☐ Single (never married, separated, divorced, widowed)
- ☐ Prefer not to respond

4. Race/ethnic origin of caregiver (check one)

- ☐ African American
- ☐ Arab American
- ☐ Asian

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- ☐ Caucasian
- ☐ Hispanic
- ☐ Pacific Islander
- ☐ Other
- ☐ Prefer not to respond

5. Educational status (check one)

- ☐ Less than 12th grade
- ☐ High School Graduate/GED
- ☐ Vocational
- ☐ College Graduate
- ☐ Graduate School
- ☐ Prefer not to respond

6. Employment status (check one)

- ☐ Employed Full-time
- ☐ Employed Part-time
- ☐ Unemployed (not employed, laid off, retired, disabled)
- ☐ Prefer not to respond

7. Does your child receive Free or Reduced Lunch? (Check one)

- ☐ No
- ☐ Yes
- ☐ Prefer not to respond

8. What is your child's current diagnosis? (Check all that may apply)

- ☐ Autism

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- Asperger's Syndrome
- PDD-NOS (Pervasive Developmental Delay Not Otherwise Specified)
- Other

This section contains 14 questions about your child's behavior, and your experiences with their school.

1. To what degree does your child's behavior interfere with day to day activities? (Check one)

- Not interfering at all
- Slightly interfering
- Somewhat interfering
- Very interfering
- Extremely interfering
- Prefer not to respond

2. What time of day at home do you experience the most difficulty with your student?

(Check all that apply)

- Before School
- After School
- Evenings
- Bedtime
- Overnight
- Mealtime

3. How comfortable are you with managing your child's challenging behavior at home?

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(Check one)

- ☐ Not comfortable at all
- ☐ Slightly comfortable
- ☐ Somewhat comfortable
- ☐ Very comfortable
- ☐ Extremely comfortable
- ☐ Prefer not to respond

4. How comfortable are you managing your child's challenging behavior in public places? (Check one)

- ☐ Not comfortable at all
- ☐ Slightly comfortable
- ☐ Somewhat comfortable
- ☐ Very comfortable
- ☐ Extremely comfortable
- ☐ Prefer not to respond

5. Have you ever heard of a "functional assessment of behavior"? (Check one)

- ☐ No
- ☐ Yes
- ☐ Prefer not to respond

6. How comfortable do you feel you understand the Applied Behavior Analysis based curriculum being implemented in your child's classroom?

- ☐ Not comfortable at all
- ☐ Slightly comfortable

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- ☐ Somewhat comfortable
- ☐ Very comfortable
- ☐ Extremely comfortable
- ☐ Prefer not to respond

7. Does your child currently have a FBA (Functional Behavior Assessment) and/or BIP (Behavior Intervention Plan) attached to their IEP?

- ☐ No
- ☐ Yes
- ☐ I'm not sure
- ☐ Prefer not to respond

8. Do you feel the parent programming offered by District of Columbia Public Schools supports your needs?

- ☐ Not at all
- ☐ Slightly
- ☐ Somewhat
- ☐ Very
- ☐ Extremely
- ☐ Prefer not to respond

9. Have you attended parent training offered by District of Columbia Public Schools in the past year?

- ☐ No
- ☐ Yes
- ☐ Prefer not to respond

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10. Have you attended parent training offered by another organization in the past year?

- ☐ No
- ☐ Yes
- ☐ Prefer not to respond

11. How often do you meet in person with teachers at your child's school?

- ☐ Almost never
- ☐ Once or twice per year
- ☐ Every few months
- ☐ Monthly
- ☐ Weekly or more

12. How involved have you been with a parent group(s) at your child's school?

- ☐ Not at all involved
- ☐ A little involved
- ☐ Somewhat involved
- ☐ Quite involved
- ☐ Extremely involved

13. In the past year, how often have you visited your child's school?

- ☐ Almost never
- ☐ Once or twice
- ☐ Every few months
- ☐ Monthly
- ☐ Weekly or more

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14. Would you be interested in being part of a nine-month pilot parent training program aimed at reducing your child's challenging behavior as a part of a Johns Hopkins

University Study?

- ☐ No
- ☐ Yes
- ☐ Prefer not to respond

If yes, please provide an email or phone number you can be reached at: (personal information will not be linked to survey answers)

Thank you for your participation!

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Appendix C

Needs Assessment Government and Non-Governmental Organizations Survey

This survey pertains to your, organization and the capacity in which it is serves families affected by Autism Spectrum Disorder (ASD) strictly in the District of Columbia. The survey is to be completed only once by a respondent for your organization.

Variable: Demographics of Organization Respondents

- Name of your organization
- Your first name
- Your last name
- Your email
- Your role in the organization
- Organization's Phone Number
- Organization's Email Address

What type of organization are you? – (drop down box)

- Government agency
- Tribal entity
- Nonprofit organization
- Unincorporated citizen group
- Local affiliate of national organization
- School or University

Mission areas (drop down box)

- Monitoring & Assessment
- Advocacy/Lobbying

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- ☐ Public Education
- ☐ Private Education
- ☐ University/College
- ☐ School-Based Programs/Contractor
- ☐ Water Rights and Allocation
- ☐ Law/Justice
- ☐ Healthcare
- ☐ Service Provider
- ☐ None of the above

How many employees does your organization have? (Check one)

- ☐ 0-5
- ☐ 5-10
- ☐ 10-25
- ☐ 25-40
- ☐ 40-60
- ☐ 60+

Does your organization serve families where at least one child has a diagnosis of ASD?

(Check one)

- ☐ Yes
- ☐ No
- ☐ Prefer not to respond

Do you explicitly limit your services to families affected by ASD? (Check one)

- ☐ Yes

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- No
- Prefer not to respond

What services do you offer families affected by ASD? (Check all that may apply)

- Case management
- Early intervention services
- Employment services
- Life-skills training
- Education/literacy assistance
- Self-help support group
- Mentoring
- Religious ministry
- Tangible aid (food/clothing)
- Housing assistance
- Medical treatment and/or assistance
- Mental health treatment and/or assistance
- Diagnosis
- Parent/family counseling
- Psychological assistance
- Financial planning
- Legal assistance
- Other (please specify)

Approximately what percentage of your clients are families affected by ASD? (Check one)

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- ☐ 0-20%
- ☐ 21-40%
- ☐ 41-60%
- ☐ 61-80%
- ☐ 81-100%

How do clients hear about your services? (Check all that may apply)

- ☐ Referred by doctor/medical professional
- ☐ From the internet
- ☐ Word of mouth/previous client referral
- ☐ From their school
- ☐ From mailings

Do you receive grant monies targeted toward serving families affected by Autism?

(Check one)

- ☐ Yes
- ☐ No
- ☐ Prefer not to respond

Do you offer parent training as part of your services? (Check one)

- ☐ Yes
- ☐ No
- ☐ Prefer not to respond

If yes, how many times a year do you offer parent trainings? (Check one)

- ☐ Once a Week
- ☐ Bi-Monthly

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- ☐ Monthly
- ☐ Quarterly
- ☐ Annually

On average, how many families attend your parent trainings? (Check one)

- ☐ 0-10
- ☐ 11-20
- ☐ 21-30
- ☐ 31-40
- ☐ 41 – and over

When conducting parent trainings, what topics do you cover? (Check all that apply)

- ☐ Educational Rights/IEPs
- ☐ Functional Behavior Assessments/Behavior Intervention Plans
- ☐ Functional Communication Training
- ☐ Social Skills
- ☐ Sibling/Family Issues
- ☐ Travel Trainings
- ☐ Job Skills
- ☐ Healthcare/Medicaid rights
- ☐ Other _____

When conducting parent trainings, do you use a specific curriculum? (Check one)

- ☐ Yes
- ☐ No
- ☐ Prefer not to respond

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If yes, is the curriculum created by members of your staff? (Check one)

- ☐ Yes
- ☐ No
- ☐ Prefer not to respond

If no, what curriculum do you use? (Write response in box)

Which of the following below do you take into consideration when planning parent programming? (Check all that apply)

- ☐ Timing of Session
- ☐ Cost of the Session
- ☐ Topic of the Session
- ☐ Transportation
- ☐ Childcare

Thank you for your participation in this survey study. Your participation is greatly appreciated!

Appendix D

Needs Assessment DCPS Employees Interview Questions

The following questions pertain to the current state of District of Columbia Public Schools (DCPS) programming for parents of children in the self-contained Autism classroom.

This study involves the audio or video recording of your interview with the researcher.

1. What are the biggest barriers you see to reaching low income parents of children with ASD who attend DCPS?
2. What are strategies that DCPS uses to advertise school events that address low-literacy rates in parents?
3. How does DCPS collect parent feedback, in order to learn what barriers their parents are experiencing?
4. To your knowledge, is DCPS currently involved in any evidence-based practice to increase family engagement?
5. If yes, what evidence-based practice is currently being used?
6. If no, is there a plan to invest in the future in evidence-based practice for parent involvement?
7. What events, in your opinion, have been most successful in supporting parents of children in the ASD program?
8. What factors did you use to measure or gauge this success?
9. Has DCPS partnered with any outside organizations or individuals to present parent programming?
10. If yes, who/what organizations were they?

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11. Will DC be partnering again with those organizations/individuals in the future?

Thank you for your time and participation!

Appendix E

Needs Assessment Survey Parental Informed Consent

Johns Hopkins University

Title: Survey of Caregiver's Attitudes on Challenging Behavior and School Involvement

Principle Investigator: Clara Kenny, MA, BCBA, Student, School of Education

Parental Informed Consent

Purpose of the Survey:

We are conducting this study to better understand the challenges faced by caregivers raising a child with challenging behavior. Additionally, we wish to gauge caregiver satisfaction with DC Public School parent programming. This will entail your completion of a survey. Information we learn from this survey, will create future parent programming and help a research project through the School of Education at Johns Hopkins University.

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

The School of Education at The Johns Hopkins University supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

Procedures:

1. Please sign this informed consent form
2. Complete the survey (the assistance of a teacher, friend, family member is permitted)
3. Return the survey to your child's teacher in the Autism Program at DC Public Schools.

Time Commitment:

Your participation is expected to take approximately 10-15 minutes of your time.

Risks/Discomfort:

Your name will not be associated in any way with the research findings. It is possible, however, with internet communications, that through intent or accident someone other than the intended recipient may see your response.

Benefits:

Although participation may not benefit you directly, we believe that the information obtained from this study will help us gain a better understanding of the need for further parent education and training programs made available through DC Public Schools. Your participation is strictly voluntary.

Confidentiality:

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Any study records that identify you will be kept confidential to the extent possible by law. The records from your participation may be reviewed by people responsible for making sure that research is done properly, including members of the Johns Hopkins University School of Education (All of these people are required to keep your identity confidential.) Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

A participant number will be assigned to all surveys. Your name will not appear in any published reports of these data. Surveys will be collected in paper format. Only group data will be included in publication; no individual achievement data will ever be published.

Compensation:

Your participation is appreciated, although strictly voluntary.

You will not receive any payment or other compensation for participating in this study

If you have questions or concerns:

You can ask questions about this research study at any time during the study by contacting Ms. Clara Kenny, MA, BCBA via phone or email: (202) 841.9332, clara.kenny@dc.gov.

If you have questions about your rights as a research participant or feel that your child has not been treated fairly, please call the Homewood Institutional Review Board at Johns Hopkins University at (410) 516-6580.

Signature:

What your signature means:

Your signature below means that you understand the information in this consent

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form. Your signature indicates that you agree to participate in the study.

By signing this consent form, you have not waived any legal rights you would have as a participant in a research study.

Signature of Parent/Caregiver/Legal Guardian

Date

Appendix F

Needs Assessment DCPS Employee Interview Informed Consent

Johns Hopkins University

Interview Informed Consent

Title: Interview of key stakeholders at District of Columbia Schools regarding parent programming for families of children with Autism Spectrum Disorder

Principle Investigator: Clara Kenny, MA, BCBA, Student, School of Education

Purpose of the Survey:

We are conducting this study to better understand the current attitudes of caregivers on their ability to work with their child's challenging behavior. Additionally, we wish to gauge the opinion of key stakeholders from within DC Public Schools regarding DC Public Schools parent programming. This will entail your completion of an in-person interview. Utilizing the information gained from the survey, a pilot intervention program will be created as part of a research project through the School of Education at Johns Hopkins University.

The School of Education at The Johns Hopkins University supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

Procedures:

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

1. Please sign this informed consent form
2. Complete the interview with the researcher, while audio is recorded

Time Commitment:

Your participation is expected to take approximately 20 minutes of your time.

Risks/Discomfort:

There are no anticipated risks to the interviewee.

Benefits:

Although participation may not benefit you directly, we believe that the information obtained from this study will help us gain a better understanding of the need for further parent education and training programs made available through DC Public Schools. Your participation is solicited, although strictly voluntary.

If you would like additional information concerning this study before or after it is completed, please feel free to contact us by phone or e-mail.

Completion of the survey indicates your willingness to take part in this study and that you are at least 18 years old.

Confidentiality:

Any study records that identify you will be kept confidential to the extent possible by law. The records from your participation may be reviewed by people responsible for making sure that research is done properly, including members of the Johns Hopkins University School of Education (All of these people are required to keep your identity confidential.) Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

All research data including audio recording and written notes will be kept in a

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locked office. Electronic data will be stored on the Principal Investigator's computer, which is password protected. Any electronic files will be erased and paper documents shredded, 10 years after collection.

Only group data will be included in publication; no individual achievement data will ever be published.

Compensation:

You will not receive any payment or other compensation for participating in this study.

If you have questions or concerns:

You can ask questions about this research study at any time during the study by contacting Ms. Clara Kenny, MA, BCBA via phone or email: (202) 841.9332, clara.kenny@dc.gov.

If you have questions about your rights as a research participant or feel that your child has not been treated fairly, please call the Homewood Institutional Review Board at Johns Hopkins University at (410) 516-6580.

Signature:

What your signature means:

Your signature below means that you understand the information in this consent form. Your signature indicates that you agree to participate in the study.

By signing this consent form, you have not waived any legal rights you would have as a participant in a research study.

Signature of Interviewee

Date

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Appendix G

Needs Assessment Governmental and Non-Governmental Organizational Survey

Informed Consent

Principal Investigator: Clara Kenny, MA, BCBA

Date: April 9, 2014

PURPOSE OF RESEARCH STUDY:

We are conducting this study to better understand the challenges faced by caregivers raising a child with ASD. Additionally, we wish to gauge the caregiver and parent training and resources currently available to families in DC. Your completion of this questionnaire will provide valuable information and insight that will be utilized to create future caregiver and parent programming and help a research project conducted by the Johns Hopkins University School of Education.

This questionnaire will be distributed to approximately 30 participating child advocacy organizations in DC.

TIME REQUIRED:

The questionnaire should take approximately 5-10 minutes to complete.

ADDITIONAL INFORMATION:

By completing this questionnaire, you are consenting to be in this research study. Your participation is voluntary and you can stop at any time.

RISKS/DISCOMFORTS:

There are no anticipated risks to questionnaire participants.

VOLUNTARY PARTICIPATION AND RIGHT TO WITHDRAW

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Your participation in this questionnaire is entirely voluntary. You choose whether to participate and will indicate below whether you agree to take part in the questionnaire. If you decide not to participate, or at a later time choose not to participate, there are no penalties.

You can stop participation in the questionnaire at any time, without any penalty or lost benefits. If you want to withdraw from the questionnaire, or want to stop participating, you are free to do so at any time during this data collection.

CONFIDENTIALITY:

All measures will be examined by the principal investigator and research affiliates only (including those entities described above). No identifiable information will be included in any reports of the research published or provided to school administration. A participant number will be assigned to all surveys)

Electronic data will be stored on the primary investigator's personal computer, which is password protected. Any paper files will be shredded, five years after collected. Only group data will be included in publication; no individual achievement data will ever be published.

COMPENSATION:

You and your organization will not receive any payment or other compensation for participating in this questionnaire.

IF YOU HAVE QUESTIONS OR CONCERNS:

You can ask questions about this research study at any time by contacting the principal investigator, Clara Kenny at 202.302.7982 or ckenny5@jhu.edu.

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

If you have questions about your rights as a research participant or feel that you have not been treated fairly, please call the Homewood Institutional Review Board at Johns

Hopkins University at (410) 516-6580

SIGNATURES

By completing this questionnaire, you are consenting to be in this research study. Your participation is voluntary and you can stop at any time.

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Appendix H

Principal Recruitment Letter



Dear Principal _____,

I am currently looking to enter into partnerships with schools to provide caregiver training to individuals with low-functioning students who attend your school in the Autism Program. This caregiver training is an intervention developed by Johns Hopkins University Doctoral Research Project.

The training will occur one time on-site at a location of your choice at your school building. The preferred time slot would be right after school, with lunch childcare provided by the DCPS Autism Team, a meal provided, as well as a backpack full of school supplies. Half of the participant schools will then be subscribed to a text message reminder plan, where concepts and skills reminders are sent to them frequently over six weeks, with half of the participants not receiving messages to serve as a control group.

Teachers will receive information on a regular basis regarding recruitment, as well as providing the caregivers with information on how to participate in this project.

I appreciate your consideration to participate in this partnership as I hope to add to the evidence-based practice of parent training for caregivers of children with Autism and improve the offerings of DC Public Schools to its caregiver-consumers.

Trainings will take place between October 15th – October 31st, with the text message subscription lasting 6 weeks following the in-person training (for the experimental group). I am happy to discuss dates with you further as desired.

If you have any questions, you can be reached at: clara.kenny@dc.gov or ckenny5@jhu.edu

Phone: 202.841.9332

Thank you!

Clara Kenny, MA, BCBA
Autism Coordinator
Office Of Specialized Instruction
District of Columbia Public Schools

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Appendix I

Participant Recruitment Letter – Comparison Group



**It's the WHY not the WHAT when working with
challenging behavior!**

**You are invited to participate in a Johns Hopkins University School of
Education research project!
Join us for a fun evening of activities to learn more about why your child
may be experiencing challenging behavior**

**For volunteering your participation you
will receive:**

- Free childcare during the training
- Dinner during the event for you and your children
- A backpack full of school supplies
- A gift card of \$5 to a local grocery store following
the completion of a survey at the end of the study

When: __ (TBD) _____

Where: (the child's school)

To RSVP or any questions please contact your:

Clara Kenny, Autism Team Member and Trainer
at:

clara.kenny@dc.gov or ckenny5@jhu.edu
202.841.9332 (call or text)

This project has been approved by:



**DISTRICT OF COLUMBIA
PUBLIC SCHOOLS**

Appendix J

Participant Recruitment Letter – Experimental Group



It's the WHY not the WHAT when working with
challenging behavior!

You are invited to participate in a Johns Hopkins University School of
Education research project!
Join us for a fun evening of activities to learn more about why your child
may be experiencing challenging behavior

For volunteering your participation you
will receive:

- Free childcare during the training
- Dinner during the event for you and your children
- A backpack full of school supplies
- A gift card of \$5 to a local grocery store following
the completion of a survey at the end of the study

When: __ (TBD) _____

Where: (the child's school)

We
ask that following
the training you be open
to receiving text message
reminders of the information
you learn during the training.

You only need to read them,
no response needed!

To RSVP or any questions please contact your:

Clara Kenny, Autism Team Member and Trainer
at:

clara.kenny@dc.gov or ckenny5@jhu.edu
202.841.9332 (call or text)

This project has been approved by:



DISTRICT OF COLUMBIA
PUBLIC SCHOOLS

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Appendix K

Teacher Instruction Letter



FROM:&

Cara Kenny, Autism Specialist, DC Public Schools
Johns Hopkins University School of Education Doctoral Student

TO: Autism Teachers

Thank you for your help with this Johns Hopkins University Doctoral Research Project.

The recruitment flyers should be distributed to any caregiver in the student's life who interacts with the student frequently. This can be sent home and returned to school. Participation in this study is completely voluntary. Parents should not feel pressured to attend, while friendly reminders to return are ok, no parent should feel it is mandatory to offer their child's information. Using the information as part of my Doctoral research and how I use the results with Central Office Speech and Language Services and how I use the results and suggestions are welcomed- but **please emphasize that participation is completely voluntary.**

If a caregiver indicates they would like to participate, please have them email me or call me to register with their contact information (instructions will be listed in their recruitment materials).

Please look for information from me regarding your school's specific training date.

If you have any questions, please reach out at: clara.kenny@dc.gov or ckenny5@jhu.edu

Thank you!!!!

By signing this you are agreeing that you understand that this study is completely voluntary for my families, and while may assist in recruitment, any questions should be directed to Clara Kenny.

Teacher Name _____

Date _____

Appendix L

Informed Consent Form – Experimental Group

Approved October 15, 2015 Protocol Number: HIRB00003510

Johns Hopkins University

**Homewood Institutional Review Board
(HIRB)**

Informed Consent Form

PURPOSE OF RESEARCH STUDY:

The objective of this study is to increase caregiver knowledge on functional assessment of challenging behavior, and assess whether the use of text messages helps participants remember the information they learned for a longer period of time. We are conducting this study to better educate caregivers in the District of Columbia on understanding why their student exhibits challenging behavior. Participation in the study will involve your participation in a training, as well as engagement in a four-week time period where you will receive text message tips and reminders.

Information we learn from the results of the training exercise will inform future parent programming at DC Public Schools and is a part of a research project through the School of Education at Johns Hopkins University.

The School of Education at The Johns Hopkins University supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

We anticipate a maximum of approximately 40 caregivers (4

training site x 10 participants each site = 40 participants) will participate.

PROCEDURES:

There will be several components to this study.

1. Please sign this informed consent form and return to the trainer at your session
2. Over four weeks following the training you will
 - a. Receive text message reminders of content and tips to work with your child approximately once every other day
 - b. Asked to fill out a brief paper survey at the end of the study

Approved October 15, 2015 Protocol Number: HIRB00003510

Title: Principal Investigator: Date:

Using Text Message Intervention to Promote Knowledge Retention of Functional Assessment of Behavior among Parents of Children with Autism Spectrum Disorders in Low Socioeconomic Areas

Dr. Karin Sandmel, Assistant Professor, School of Education
August 23 2015

TIME COMMITMENT:

Written Informed Consent Form (11/05)

Your participation is expected to take approximately 2 1/2 hours on the in-person training day at your child's school, approximately 15 minutes per week for four weeks after the in-person training reading the text message correspondence, and 15 minutes for the final survey at the conclusion of the study.

RISKS/DISCOMFORTS:

Participation in this study may involve risks that cannot be

foreseen at this time. Your name will not be associated in any way with the research findings. It is possible, however, with the internet and text communications, that through intent or accident someone other than the intended recipient may see your responses should you choose to reply to text messages.

BENEFITS:

Potential benefits to the participant are an increased understanding of why your child exhibits challenging behavior, and strategies on how to identify patterns of behavior. It is believed that participants will better understand; feel more supported by receiving text message reminders of strategies on the convenience of their phone. There is potential for greater understanding and increased success rates providing education and support to caregivers of children with special needs. Your participation is strictly voluntary.

VOLUNTARY PARTICIPATION AND RIGHT TO WITHDRAW:

Your participation in this study is entirely voluntary: You choose whether to participate. If you decide not to participate, there are no penalties, and you will not lose any benefits to which you would otherwise be entitled.

If you choose to participate in the study, you can stop your participation at any time, without any penalty or loss of benefits. If you want to withdraw from the study, please contact your child's teacher or Clara Kenny (ckenny5@jhu.edu).

ALTERNATIVES TO PARTICIPATION:

Alternatives to participating in this research study include attendance at a Central Office Parent Education class delivered by the Autism Team offered once a year on various topics related to educating and caring for students with Autism Spectrum Disorder.

CONFIDENTIALITY:

Any study records that identify you will be kept confidential to the extent possible by law. The records from your participation may be reviewed by people responsible for making sure that research is done properly, including members of the Johns Hopkins University Homewood Institutional Review Board and officials from government agencies such as the National Institutes of Health and the Office for Human Research Protections. (All of these people are required to keep your identity confidential.) Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

Written Informed Consent Form (11/11)

Approved October 15, 2015 Protocol Number: HIRB00003510

Title: Behavioral Skills Training for Caregivers of Students with Autism Spectrum Disorder PI: Clara Kenny, Date: August, 2015

A participant number will be assigned to all surveys distributed during the duration of the training. Your name will not appear in any published reports of these data. Surveys will be collected in paper format. Phone numbers will be kept in a locked cabinet, and electronically stored in password-protected computer files.

COSTS

Costs you may incur include the cost for transportation to the training, and the cost of text messages. The total cost is estimated at approximately \$10 depending on your mobile device plan.

COMPENSATION:

You will not receive any payment or other compensation for participating in this study however, childcare and a meal will be provided during the in-person training portion. Additionally, participants will receive one new backpack full of school supplies to thank them for participation. You will receive a gift card of \$5

to a local grocery store once you have turned in the small final survey at the conclusion of the study.

IF YOU HAVE QUESTIONS OR CONCERNS:

You can ask questions about this research study now or at any time during the study, by talking to the researcher(s) working with you or by calling Clara Kenny, Principal Researcher at 202.841.9332 or email: ckenny5@jhu.edu.

If you have questions about your rights as a research participant or feel that you have not been treated fairly, please call the Homewood Institutional Review Board at Johns Hopkins University at (410) 516-6580.

SIGNATURES – WHAT YOUR SIGNATURE MEANS:

Your signature below means that you understand the information in this consent form. Your signature also means that you agree to participate in the study. By signing this consent form, you have not waived any legal rights you otherwise would have as a participant in a research study.

Participant's Signature Date

Written Informed Consent Form (11/11)

Approved October 15, 2015 Protocol Number: HIRB00003510

Title: Behavioral Skills Training for Caregivers of Students with Autism Spectrum Disorder PI: Clara Kenny

Date: August, 2015

Signature of Person Obtaining Consent (Investigator or HIRB Approved Designee)

Date

Approved October 15, 2015 Protocol Number: HIRB00003510

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

Title: Behavioral Skills Training for Caregivers of Students with Autism Spectrum Disorder PI: Clara Kenny

Date: August, 2015

Written Informed Consent Form (11/11)

Appendix M

Informed Consent Form – Comparison Group

Approved October 15, 2015 Protocol Number: HIRB00003510

Johns Hopkins University

Homewood Institutional Review Board
(HIRB)

Informed Consent Form

PURPOSE OF RESEARCH STUDY:

The objective of this study is to increase caregiver knowledge on functional assessment of challenging behavior. We are conducting this study to better educate caregivers in the District of Columbia on understanding why their student exhibits challenging behavior. Participation in the study will involve your participation in a training and completion of a survey four weeks following the training. Information we learn from the results of the training exercise will inform future parent programming at DC Public Schools and is a part of a research project through the School of Education at Johns Hopkins University.

The School of Education at The Johns Hopkins University supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

We anticipate a maximum of approximately 40 caregivers (4 training site x 10 participants each site = 40 participants) will participate.

PROCEDURES:

There will be several components to this study.

Please sign this informed consent form and return to the trainer at your session

After four weeks following the training you will be asked to fill out a brief paper survey at the end of the study.

TIME COMMITMENT:

Your participation is expected to take approximately 2 1/2 hours on the in-person training day at your child's school, and approximately 15 minutes at the end of the study to complete the final survey six weeks after your training session.

Written Informed Consent Form (11/05)

Approved October 15, 2015 Protocol Number: HIRB00003510

Title: Principal Investigator: Date:

Training for Caregivers of Students with Autism Spectrum Disorders on Functional Behavior Assessment

Dr. Karin Sandmel, Johns Hopkins University School of Education
Assistant Professor

August 23, 2015

RISKS/DISCOMFORTS:

Participation in this study may involve risks that cannot be foreseen at this time. Your name will not be associated in any way with the research findings. It is possible, however, with the internet and text communications, that through intent or accident someone other than the intended recipient may see your responses should you choose to reply to any messages.

BENEFITS:

Potential benefits to the participant are an increased understanding of why your child exhibits challenging behavior, and strategies on how to identify patterns of behavior. It is believed that participants will better understand; feel more supported by participating in this study. There is potential for greater understanding and increased success rates providing education and support to caregivers of children with special needs. Your participation is strictly voluntary.

VOLUNTARY PARTICIPATION AND RIGHT TO WITHDRAW:

Your participation in this study is entirely voluntary: You choose whether to participate. If you decide not to participate, there are no penalties, and you will not lose any benefits to which you would otherwise be entitled.

If you choose to participate in the study, you can stop your participation at any time, without any penalty or loss of benefits. If you want to withdraw from the study, please contact your child's teacher or Clara Kenny (ckenny5@jhu.edu).

ALTERNATIVES TO PARTICIPATION:

Alternatives to participating in this research study include attendance at a Central Office Parent Education class delivered by the Autism Team offered once a year on various topics related to educating and caring for students with Autism Spectrum Disorder.

CONFIDENTIALITY:

Any study records that identify you will be kept confidential to the extent possible by law. The records from your participation may be reviewed by people responsible for making sure that research is done properly, including members of the Johns Hopkins University Homewood Institutional Review Board and officials from

government agencies such as the National Institutes of Health and the Office for Human Research Protections. (All of these people are required to keep your identity confidential.) Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

A participant number will be assigned to all surveys distributed during the duration of the training. Your name will not appear in any published reports of these data. Surveys will be collected in paper format. Phone numbers will be kept in a locked cabinet, and electronically stored in password-protected computer files.

Written Informed Consent Form (11/11)

Approved October 15, 2015 Protocol Number: HIRB00003510

Title: Behavioral Skills Training for Caregivers of Students with Autism Spectrum Disorder PI: Linda Tsantis, Clara Kenny

Date: April, 2015

COSTS

Costs you may incur include the cost for transportation to the training. The total cost is estimated at approximately \$5 depending on your method of transportation.

COMPENSATION:

You will not receive any payment or other compensation for participating in this study however, childcare and a meal will be provided during the in-person training portion. Additionally, participants will receive one new backpack full of school supplies to thank them for participation. You will receive a gift card of \$5 to a local grocery store once you have turned in the small final survey at the conclusion of the study.

IF YOU HAVE QUESTIONS OR CONCERNS:

You can ask questions about this research study now or at any time during the study, by talking to the researcher(s) working with you or by calling Clara Kenny, Principal Researcher at 202.841.9332 or email: ckenny5@jhu.edu.

If you have questions about your rights as a research participant or feel that you have not been treated fairly, please call the Homewood Institutional Review Board at Johns Hopkins University at (410) 516-6580.

SIGNATURES

WHAT YOUR SIGNATURE MEANS:

Your signature below means that you understand the information in this consent form. Your signature also means that you agree to participate in the study. By signing this consent form, you have not waived any legal rights you otherwise would have as a participant in a research study.

Participant's Signature Date

Signature of Person Obtaining Consent Date (Investigator or HIRB Approved Designee)

Written Informed Consent Form (11/11)

Approved October 15, 2015 Protocol Number: HIRB00003510

Title: Behavioral Skills Training for Caregivers of Students with Autism Spectrum Disorder PI: Linda Tsantis, Clara Kenny

Date: April, 2015

Appendix N

Intervention Phase I Demographics Questionnaire

It's the Why not the What – Demographics Questionnaire

- This section contains questions pertaining to you, the caregiver, to learn a little bit about you
- Instructions: Please circle a response for each question below. Please read each question carefully. Please answer each question to the best of your ability.
- Your answers will be kept anonymous

1. What is your relationship to the child of concern?

- ☐ Biological Parent
- ☐ Adoptive Parent
- ☐ Grandparent
- ☐ Foster Parent
- ☐ Legal Guardian
- ☐ Relative
- ☐ Other: _____

2. Gender (circle one)

- ☐ Female
- ☐ Male
- ☐ Prefer not to respond

3. Age (circle one)

- ☐ Under 18
- ☐ 18-25

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

- ☐ 26-30
- ☐ 31-40
- ☐ 41 and over
- ☐ Prefer not to respond

4. Relationship Status (circle one)

- ☐ Single (never married, separated, divorced, or widowed)
- ☐ Married (married or cohabitating)
- ☐ Prefer not to respond

5. Race (circle all that apply)

- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Hispanic
- ☐ Black or African American
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ White (Not Hispanic)

6. Educational Status (circle one)

- ☐ Less Than 12th Grade
- ☐ High School Graduate/GED
- ☐ Some College
- ☐ College Graduate
- ☐ Post-College
- ☐ Other: _____

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

7. Employment Status (circle one)

- ☐ Employed Full-time (40 or more hours/week)
- ☐ Employed Part-time (less than 40 hours/week)
- ☐ Unemployed (not employed, laid off, retired, or disabled)
- ☐ Other

8. Does your child receive Free or Reduced Lunch? (circle one)

- ☐ Yes
- ☐ No

9. The child I'm most concern about is diagnosed as: (circle all that apply)

- ☐ Autism
- ☐ PDD-NOS (Pervasive Developmental Delay-Not Otherwise Specified)
- ☐ Other: _____

10. If you have more than child with a diagnosis, please note what those children are diagnosed as:

- ☐ Autism
- ☐ PDD-NOS (Pervasive Developmental Delay-Not Otherwise Specified)
- ☐ Other: _____

Thank you very much!

Appendix O

Intervention Phase I and II Quantitative and Qualitative Questionnaire

It's the Why not the What – Training Questionnaire

- Instructions: This section contains 18 general knowledge questions, as well as questions about your child of concern's behavior and your experiences with that behavior. Please answer each question to the best of your ability.

1. Have you ever heard of a “functional behavior assessment” or “FBA”? (circle one)

- ☐ No
- ☐ Yes, but I do not know what it means
- ☐ Yes, and I know what it means

2. Do you find day-to-day activities, like going to the grocery store, with the child of concern difficult? (circle one)

- ☐ Not difficult at all
- ☐ Slightly difficult
- ☐ Somewhat difficult
- ☐ Very difficult
- ☐ Extremely difficult

3. “ABA” stands for Applied Behavior _____ . (circle one)

- ☐ Achievement
- ☐ Association
- ☐ Analysis
- ☐ Activities

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

☐ I'm not sure

4. True or False: Behavior is something that a person does that can be observed, measured, and repeated. (circle one)

☐ True

☐ False

☐ I'm not sure

5. What time of day at home do you experience the most difficulty with the child of concern? (circle all that apply)

☐ Before School (breakfast, getting dressed, getting on the bus)

☐ After School (getting off the bus, free time before dinner, trips to therapy)

☐ Evenings (dinner, after dinner free time)

☐ Bedtime (putting on pajamas, bath time, brushing teeth)

☐ Overnight (falling asleep, staying in own bed)

☐ Mealtime (breakfast, lunch, dinner)

6. The “A” in “A-B-C Data” stands for? (circle one)

☐ Antecedent

☐ After

☐ Anterior

☐ Attention

☐ I'm not sure

7. Are you comfortable with managing the child's challenging behavior (examples: hitting, kicking, etc.) at home? (circle one)

☐ Not comfortable at all

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

- ☐ Slightly comfortable
- ☐ Somewhat comfortable
- ☐ Very comfortable
- ☐ Extremely comfortable

8. Are you comfortable with managing the child's challenging behavior (examples: hitting, kicking, etc.) in public places? (circle one)

- ☐ Not comfortable at all
- ☐ Slightly comfortable
- ☐ Somewhat comfortable
- ☐ Very comfortable
- ☐ Extremely comfortable

9. True or False: By looking at what takes place right before and right after a challenging behavior (examples: hitting, kicking, etc.), we can guess why it is happening. (circle one)

- ☐ True
- ☐ False
- ☐ I'm not sure

10. The "C" in "A-B-C Data" stands for? (circle one)

- ☐ Calm
- ☐ Cycle
- ☐ Consequence
- ☐ Consistent
- ☐ I'm not sure

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

11. Finding out why a behavior is happening is also known as finding the _____ of the behavior. (circle one)

- ☐ Topography
- ☐ Function
- ☐ What
- ☐ Solution
- ☐ I'm not sure

12. There are 4 main functions of behavior. Name two of them below. (write two answers)

One:

Two:

13. Do you agree with the following statement? "I feel like I could do more to help my child by the way I respond to their challenging behavior." (circle one)

- ☐ Do not agree at all
- ☐ Slightly agree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Agree very much

14. What does "STOP" in "STOP then act!" stand for? (fill-in-the-blanks)

- ☐ S: _____
- ☐ T: _____

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

☐ O: _____

☐ P: _____

☐ I'm not sure

15. Behavior is maintained by the _____ delivered following the response. (circle one)

☐ Punishments

☐ Rewards

☐ Consequences

☐ Tokens

☐ I'm not sure

16. A behavior is _____ when it is reinforced. (circle one)

☐ Unlikely to happen

☐ Weakened

☐ More likely to happen

☐ Going to stay the same

☐ I'm not sure

17. The antecedent happens _____ the target behavior. (circle one)

☐ Right after

☐ During

☐ Right before

☐ 5 minutes after

☐ I'm not sure

18. I feel my cellphone is a good way for me to be reminded about information I have learned. (circle one)

- ☐ Do not agree at all
- ☐ Slightly agree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Agree very much

Thank you very much!

Appendix P

Training Syllabus

It's the Why Not the What When It Comes to Challenging Behavior

- Introduction of trainer
- Explanation of training and agenda
- Training content:
 - Definition of applied behavior analysis in educational settings
 - What is challenging behavior?
 - Behavior that interferes with an individual's ability to learn and function in society
 - Behavior is learned
 - Behavior is objective, measurable, and repeatable
 - Why engage in challenging behavior?
 - Individuals engage in behavior because their behaviors have produced a desirable result in the past
 - Topography of behavior
 - The "what" of the behavior is the appearance of the behavior
 - A description of what a behavior looks like:
 - Hitting, kicking, spitting, etc.
 - Function of behavior
 - The why or reason behind the occurrence of a behavior is also known as the function of the behavior
 - Identifies the things that are maintaining the behavior
 - A description of the purpose the behavior serves
 - Four functions of behavior:

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

- To get attention
 - To get the attention of an adult, a peer, etc.
- To get something
 - To get access to:
 - Tangible items
 - Activities
- To get out of
 - To get out of or delay
 - Directions, demands, or requests
- Self-stimulatory
 - Because it feels good
- How to find the function?
 - We have to be behavior detectives
 - Use the ABC's of behavior:
 - A = antecedent
 - Anything that happens immediately before the behavior happens
 - B = behavior
 - The behavior we are interested in
 - C = consequence
 - Anything that happens immediately after the behavior; the consequence can be "positive" or "negative"
- So how do we react?
 - S = stop
 - T = take a deep breath

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

- O = observe
- P = plan
- Then act!
- Reinforcement
 - Any consequence that strengthens the behavior that it follows
 - If we reinforce a behavior, then it is more likely to happen again in the future

Appendix Q

Content of Text Messages Sent

1. Hi, this is from the JHU/DCPS Training on Tuesday. For your first text I just want to thank you for your participation on Tuesday! (no response needed)
2. Remember: When we look at the FUNCTION of behavior, we are looking at the WHY or the PURPOSE of the behavior. - JHU/DCPS Training (no response needed)
3. Remember: The "A" in A-B-C data stands for Antecedent, and this is what happens right BEFORE the behavior. -JHU/DCPS Training (no response needed)
4. Remember: Behavior is something that a person does that is observable, measurable, and repeatable. -JHU/DCPS Training (no response needed)
5. Remember: STOP: Stop, Take a Breath, Observe, Plan then Act! When responding to challenging behavior. -JHU/DCPS Training (no response needed)
6. Remember: A Behavior is MORE LIKELY to happen when it is reinforced. - JHU/DCPS Training (no response needed)
7. Remember: There are 4 Functions of behavior: To get Attention, To get Access to something, To Escape, and Self-Stimulatory -JHU/DCPS Training (no response needed)
8. Remember: Behavior is maintained by the CONSEQUENCES delivered following the response. -JHU/DCPS Training (no response needed)
9. Remember: "ABA" stands for Applied Behavior ANALYSIS. -JHU/DCPS Training (no response needed)

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

10. Remember: By looking at what takes place right before and right after a challenging behavior, we can guess why it is happening. -JHU/DCPS Training (no response needed)
11. Thank you for your participation. Remember return the questionnaire for a \$5 thank you gift card if you have not yet!! -JHU/DCPS Training (no response needed)

Curriculum Vitae

Clara S. Kenny, MA, EdD(c), BCBA

1301 North Troy Street #509, Arlington, VA 22201

ckenny5@jhu.edu

(202) 841-9332

EDUCATION

Johns Hopkins University – Baltimore MD, presently enrolled

- Doctor of Education
- Concentration in Entrepreneurial Leadership in Education
- Current GPA: 3.86
- Date of Degree Conferral: May 2016

The George Washington University – Washington DC, 06/2009-01/2012

- Master of Arts in Education and Human Development, Qualified for DC Teaching Licensure
- Concentration in Teaching Students with Emotional and Behavioral Disabilities
- GPA 3.92

The George Washington University – Washington DC, 08/2004-05/2008

- Bachelor of Arts in Human Services with a Minor in Sociology
- Dean's List Member

DISSERTATION

“An Investigation Into Using Text Message Intervention to Promote Information Retention of Functional Assessment of Behavior Among Caregivers of Children with Autism Spectrum Disorders in Low Socioeconomic Areas”

CAREGIVER FUNCTIONAL BEHAVIOR ASSESSMENT INTERVENTION

- This study addresses a problem of practice in District of Columbia Public Schools with an intervention teaching caregivers of children with Autism in low socioeconomic areas about functional behavior assessments incorporating the use of a text messaging reminder system to promote knowledge retention after in-person training
- Dissertation Readers: Professor Linda Tsantis, EdD (chair), Professor Karin Sandmel, PhD, and Linda Brandenburg, EdD

WORK EXPERIENCE

District of Columbia Public Schools – Washington, DC, 03/13-Present

- Autism Supports Specialist

Behavior Backup, LLC – Arlington, VA, 04/15-Present

- Clinical Director and Founder

A Piece of Mind – Washington, DC, 05/07-09/11 and 09/12-03/13

- Lead Supervisor

Oxfordshire County Council – Oxford, United Kingdom, 01/12-07/12

- Behavior Consultant

The Children's Guild – Chillum, MD, 08/2009-06/2010

- Student Teacher

LICENSES

- Board Certified Behavioral Analyst, License 1-13-13863